Staffing and Organizational Study for the Fire-Rescue Department

CITY OF FORT LAUDERDALE, FLORIDA

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Matrix Consulting Group was retained by the City of Fort Lauderdale, Florida to develop a Staffing and Organizational Study of the Fire-Rescue Department. The project team conducted this study from September through November 2006. The focus of the study is on the following key issues:

• Is the Fire-Rescue Department appropriately staffed to provide currently targeted levels of service? Does the Department have sufficient resources deployed to provide these services?

• Are there opportunities to redeploy personnel, to reclassify personnel, etc. that would result in improved effectiveness or efficiency in the Department?

• Is the current organizational structure designed to provide effective oversight, operations, planning, command and control? Are there opportunities to make changes to the structure that would result in improved effectiveness or efficiency in the Fire-Rescue Department?

• Are there opportunities to enhance management systems in the Fire-Rescue Department that would result in improvements to management, effectiveness and efficiency?

In order to address these issues, the project team took a detailed and analytical approach. Steps that were taken in the process of developing this final report included the following:

• Interviews were conducted with staff throughout the Fire-Rescue Department.

• Senior staff were interviewed in detail regarding the operations of their units, approaches to handling work, service level objectives, etc.

• Staff throughout the Department with unique roles and responsibilities was interviewed regarding their duties and assignments.

• The project team met with members of the bargaining unit executive council to discuss issues of staffing and other issues related to this assignment.

•	Members of the project team spent time touring the various areas of responsibility for the Fire-Rescue Department. The focus of these tours were on station locations, risk issues, key hazards, and to improve our general familiarity with the community.

•	The project team collected detailed workload and service level data describing the activities of the Fire-Rescue Department. These data included CAD / RMS data, other workload for personnel assigned to shift operations, fire prevention, training, ocean rescue workload, etc.

•	The Matrix Consulting Group conducted a comparative survey which included communities from Southeast Florida and from around the United States. The focus of this survey was on the issues specifically germane to this project including organizational structure, classifications, workload, staffing, deployment, unit staffing, call response protocols, etc.

The following section provides a summary of the project team's key findings and recommendations.

EXECUTIVE SUMMARY

The exhibit, which follows, provides a summary of the project team's key findings and recommendations. More detailed information and analysis can be found in the body of the report:

Findings	Recommendation	Fiscal Impact
The current organizational structure is essentially sound, with the exception of some operational units assigned within the Administrative Division.	Shift Ocean Rescue to the Operations Division.	None

Findings	Recommendation	Fiscal Impact
A review of the roles and responsibilities of a number of positions within the command staffing of the Fire-Rescue Department suggests that there are opportunities to make several key changes.	The project team recommends the elimination of the three shift command Divisions Chiefs in the Operations Division. Additionally, the project team recommends the creation of a new Nurse position (EMS) and a new Analyst position (Office of the Chief). Further, the Fire Prevention Division Chief should be reclassified as the Fire Marshal. The Division Chief in EMS / Training should be eliminated and replaced with a Battalion Chief reporting to the Assistant Chief. These changes should be done using attrition. *An organizational chart reflecting these changes can be found in the body of the report.*	($310,000)
Management systems in the Fire-Rescue Department represent a mix of findings: policies and procedures are in place – but are not regularly reviewed; formal meetings are held and minutes are take – but processes for ensuring accountability are not in place; decision making is not generally driven by analysis and the use of data (the project team has recommended the creation of an Analyst position to assist with this).	Focus on addressing specific management gaps, including: development of an accountability system; development of formal measures that are actively tracked and used to hold company officers and chiefs accountable; adoption of an "early warning system" for staff issues.	None
Current performance standards focus on the totality of response time and do not provide sufficient focus on individual elements of response.	Adopt performance standards related to the processing of calls within the dispatch center and the "reflex" time of personnel responding to calls (time from dispatch until the unit is en-route). These critical times should be closely monitored by Operations staff to identify potential issues and to hold personnel accountable for these key elements of response time performance.	None
The project team found that there is a significant disparity in terms of the levels of utilization for staff assigned to line units in the FLFRD. Utilization levels appear to range from 110% to 43% of effective utilization.	The FLFRD should take two steps: 1) make better use of less well utilized units to handle prevention activities and 2) consider rotation of personnel between very highly utilized companies and less well utilized companies – this has two benefits – it provides some respite to staff who are over-utilized and it provides opportunities to utilize skills in the field for less well utilized personnel.	None

Findings	Recommendation	Fiscal Impact
Staffing for Operations is appropriate to handle on-duty assignments and to cover vacation, sick and other leaves. However, the staffing level does not provide for coverage of typical annual turnover.	While overtime is currently higher than anticipated, this is to be expected given the lag in hiring personnel to fill vacancies in the FLFRD. The use of overtime to cover vacancies when staffing levels are at or near current authorized levels results in a small savings over the cost of hiring additional personnel to provide for turnover. This practice should be continued. Use of the Telestaff calling feature will also enable the FLFRD to discontinue the use of Lieutenants working on overtime for the purpose of setting daily staffing.	($8,500)
Several of the City of Fort Lauderdale's ambulances are very highly utilized – at more than 110% of targeted levels. Our analysis shows that the City, in aggregate, has the correct number of units. However, analysis of sub-areas of the City shows that there is an issue providing sufficient EMS transport units in the south / central areas of the City.	The City should authorize, using overtime, the deployment of a 10-hour EMS unit. This unit should work in the areas served by stations 2/8, 46 and 47. This will reduce response delays and will offset some of the workload being handled by these very busy units.	$234,000
South East Florida fire-rescue units tend to deploy a third person on their ambulances. A survey of similar agencies nationwide shows that this is an unusual practice outside of the region. An analysis of the impact of placing a third person on the unit, versus taking that third person from an Engine company when necessary shows that there is little analytical support for shifting to a 3-person rescue.	Maintain the 2-person approach to staffing as is the current practice. Continue to monitor the utilization of a third person (from the Engine). Note that shifting to a 3-person rescue approach would cost the City approximately $3.7 million annually (salaries and benefits).	None
One major challenge faced by the FLFRD is the lack of emergency medical dispatch / call prioritization in the dispatch center. Without this critical and increasingly common tool, the FLFRD is faced with over-dispatching units (i.e., an Engine on every call with the Rescue) due to lack of information. This also under utilizes the paramedics on the Engines, devaluing the benefit of the program of having paramedic Engine companies Citywide.	The Fire-Rescue Department should promote the adoption of EMD in the dispatch center. This approach should be coupled, once implemented, with a change in the dispatch protocols under which Rescues would be sent alone to calls triaged as basic life support (BLS). An Engine could be added later as needed.	1 x $40,000 plus $5,000 maintenance annually

Findings	Recommendation	Fiscal Impact
While the City and the Fire-Rescue Department have made investments into technology, one gap continues to be the inability of Fire Inspectors to utilize remote technology to enter the results of their inspections, issues citations and bills, etc. It is also interesting that the Inspectors have been issued take home cars – something which is typically done for personnel who have to respond to emergencies and to conduct investigations on call-out.	Install remote access software on the laptops already issued to the Inspectors enabling them to conduct routine transactions from their vehicles without having to return to the office. Consider elimination of the take-home car program for Inspectors.	$10,000
The Fire Dispatch center is appropriately staffed given current workloads and service demands. The fact that the two centers are staffed separately may result in excess staffing capacity during certain hours of the day.	No changes should be made to current staffing in the Fire-Rescue dispatch center. However, future consideration should be given to consolidation of the two dispatch centers in the City.	None

The chapter, which follows, focuses on the current organizational structure and the command staffing in the Fire-Rescue Department.

2.   ANALYSIS OF ORGANIZATIONAL STRUCTURE AND MANAGEMENT STAFFING

This chapter focuses on the organizational structure and management staffing for the Fort Lauderdale Fire-Rescue Department. The first two sections focus on the organizational structure of the Department while the third and final sections focus on the recommendations for improvement and cost implications of those recommendations. The first section, that follows, provides a summary of the criteria used by the Project Team to evaluate the organizational structure of the Department.

1.   CRITERIA OF EFFECTIVE ORGANIZATIONAL STRUCTURE.

In order to evaluate the organizational structure of the Fort Lauderdale Fire-Rescue Department, the project team first had to identify the criteria by which the organizational structure would be judged. The paragraphs, that follow, describe those criteria as well as describe what is meant by each of them:

- **Accountability and Responsibility is clearly identified:** The organizational must be consistent with the concept that clear lines of authority and decision making are essential for any organization to achieve excellence. Areas of responsibility are clearly delineated and points of accountability are readily identifiable.

- **Span of Control or Communication is Optimal:** Effective organizations are structured so that lines of communication are identifiable and there where there are multiple reporting relationships, responsibility for communication and control are clearly identified and understood.

- **There are essential checks and balances in place where necessary:** As it relates to this project, checks and balances are necessary in the area of clinical performance review as opposed to operational performance review. Effective EMS organizations are able to maintain a constructive and remedial focus on clinical issues while maintaining formal organizational discipline in the operational arena.

- **Structure is based on task requirements and work flow as opposed to specialized skills of individual members:** There is a tendency in some organizations to organize work patterns around the specific passions or skills of individual members. This results in high friction levels of most work processes and the relationships between group members and groups themselves.

- **Similar titled positions have similar responsibilities and levels of accountability:** The organization should be structured such that decision making authority and the ability of decisions to impact the organization in a strategic way are all found at similar levels of the hierarchy.

- **Support functions are integrated into operational areas to the extent that "siloing" of support functions has not evolved:** Many organizational structures actually support the development of functional "silos" wherein function specialty areas such as purchasing, personnel or finance become their own bureaucracies. The existence of such silos indicates that the real needs of the operating units closest to the citizen/customer are not being met.

The section, that follows, provides our analysis of the current organizational structure and opportunities for improvement.

2.   THERE ARE SEVERAL ISSUES WITH THE CURRENT ORGANIZATIONAL STRUCTURE.

The Matrix Consulting Group examined the current organizational structure of the Fire-Rescue Department. A summary of our findings compared to the criteria, listed above, are provided, on the following page:

Following this review, the project team identified the following specific issues and alternatives:

- **The Executive Deputy Chief position is not permanently filled and has not had specific area of responsibility.** There is a currently vacant Executive Deputy Chief position. This position has been vacant since the Chief's position became vacant. This position has no specific portfolio (all administrative and operational issues are handled by the two Assistant Chiefs). However, this should be delayed while the current Interim Chief fills the position during the transition under the newly appointed Chief. At the time that the transition is complete, this position could be considered for elimination depending on the needs of the Department administration at that time.

Criteria / Position	Accountability and Responsibility	Span of Control	Check and Balances	Logical Grouping of Functions	Ranks Have Similar Responsibilities	Operations and Administrative Functions Grouped
Chief	√	√	√	√	√	√
Exec. Dep. Chf.	√		√			
AC Ops.	√	√	√	√	√	√
AC Admin.	√	√	√	√	√	√
DC Ops. (Shift)	√	√		√	√	√
DC EMS	√		√		√	√
DC Prevention	√	√	√		√	
BC (Spec. Proj.)	√		√	√	√	√
BC Ops. (Shift)	√	√	√	√	√	√
BC EMS / Training	√		√		√	√
BC Support	√		√	√	√	
Captain (EMS)	√		√	√	√	√
Capt. (EMS Shft).	√		√	√	√	√
Captain (Training)	√	√	√	√	√	√
Lt. (Support)	√	√	√	√	√	√
Capt. (Ocean)	√	√	√	√	√	√

- **Division Chiefs on shift operations appear to be an unnecessary level of management.** The role of the Division Chief in the Operations division is ambiguous. Primarily, the position is there to handle "shift command," to coordinate shift operations and to respond to large-scale events. These functions can be handled by the Assistant Chief (Operations) and the shift Battalion Chiefs – and the introduction of this additional layer of management reduces the level of responsibility and accountability held by the shift Battalion Chief. The Division Chief position in the Operations Division should be considered for elimination. The senior Battalion Chief could handle the roles of shift command and coordination. Any reductions should be accomplished using attrition and turnover.

- **The Department of Fire-Rescue has no trained analytical capability.** There is no dedicated analytical position in the Department at this time. As data utilization increases and as management becomes more accustomed to utilizing data, it will be increasingly important to have an analyst on staff to evaluate data and to produce analysis for the Chief and other members of the command staff.

- **The Division Chief in Prevention should be reclassified as the Fire Marshal.** The Division Chief for Prevention and Support is a hold over from a period when where were two Battalion Chiefs assigned under this position (one used to run dispatch). This position would be more appropriately classified as a Fire Marshal (compensated at the level of the current Division Chief classification given the level of responsibility).

- **The Battalion Chief overseeing communications and support should report to the Assistant Chief, not the Fire Marshal.** The Battalion Chief in Prevention should retain management responsibility for dispatch and support services. This position should report directly to the Assistant Chief for Administration given the importance of both of these functional areas.

- **EMS and Training should be overseen by a Battalion Chief - each of whom should report to the Assistant Chief for Administration.** Both Training and EMS are critical functions for the Department. Therefore, each should have a Battalion Chief dedicated to overseeing these critical areas. The current Division Chief position should be reclassified as a Battalion Chief, and one should be assigned to EMS and the other to Training.

- **A nurse should be added as a layer of oversight and review for the EMS program – focusing on quality assurance, medical compliance, blood borne pathogen control, etc.** As a critical function, EMS should receive additional internal third-party oversight. A nurse position should be added to conduct critical quality assurance review. This position should be able to conduct more thorough review than the three EMS Captains assigned to the shifts. The EMS

Captains should continue their role in the field, and in the initial review of all run reports for EMS calls for service.

• **The oversight of the support function (primarily warehousing and logistics) should be converted to a civilian position.** The current approach utilizing a sworn Fire Lieutenant to supervise the logistics functions represents a mismatch between the training and special skills of a Firefighter and the special skills required to manage a logistics operation. This position represents an opportunity to civilianize and to better match skills and training with responsibility.

• **Ocean Rescue currently reports to the Administration Assistant Chief even though it is primarily an operational unit providing services to the public.** The Ocean Rescue function has little in common with the other administrative and support functions found in the Administration Division of the Fire-Rescue Department. The unit interacts with other operational units and should be moved to the Operations Division, with the Ocean Rescue Captain reporting to the Assistant Chief for Operations. On a daily basis, this reporting relationship should go through Battalion 13 (assigned to manage the beach stations).

The table, which follows, provides a summary of the position changes recommended by the Matrix Consulting Group:

Elimination	Addition
Executive Deputy Chief	Fire Marshal
Division Chief (Shift)	Battalion Chief / EMS
Division Chief (Prevention)	Logistics Manager
Division Chief (EMS / Training)	Nurse (QA/QC)
Lieutenant (Logistics)	Analyst

This would result in the following major changes:

• Elimination of the Executive Deputy Chief position.

• Elimination of the Division Chief classification through attrition.

• Addition of a Nurse classification.

• Addition of an Analyst classification (similar to the Police Department's Crime Analyst).

• Addition of a Logistics Manager classification.

• Reduction of seven total positions with an addition of five positions for a net change of two.

The fiscal impact of these changes are shown, below:

Classification	Change	Salary (Mid)	Benefit Rate	Cost / Position	Total Cost
Executive Deputy Chief *	-1	$97,780	52.4%	$149,017	-$149,017
Division Chief (Shift)	-3	$90,792	52.4%	$138,367	-$415,101
Division Chief (40 Hour)	-2	$93,392	52.4%	$142,329	-$284,659
Fire Marshal	1	$90,792	52.4%	$138,367	$138,367
Battalion Chief (40 Hr.)	2	$82,846	52.4%	$126,257	$252,515
Lieutenant	-1	$64,251	52.4%	$97,919	-$97,919
Analyst	1	$55,000	40.0%	$77,000	$77,000
Nurse	1	$65,000	40.0%	$91,000	$91,000
Logistics Manager	1	$55,000	40.0%	$77,000	$77,000
				Total	**-$310,813**

* Only after the current Interim Chief has vacated this position following the transition under the new Chief.

This analysis shows that the fiscal impact of making these changes will be an annual savings of approximately $310,000 (or $162,000 if the Executive Deputy Chief position is not eliminated). The organization chart, which follows, shows an outline of this recommended organizational structure:
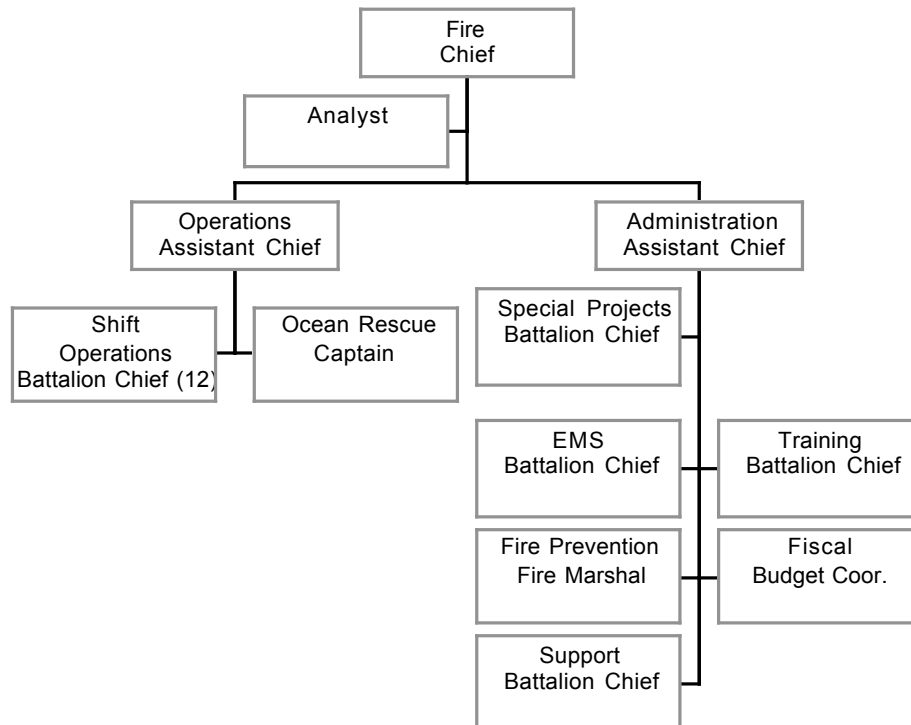
Recommendation: Eliminate the Executive Deputy Chief, all Division Chief, and the Logistics Lieutenant position. At the same time, create a new Fire Marshal, two new Battalion Chief, one Nurse, one Analyst and one Logistics Manager positions. The net annual savings from these changes will be approximately $310,000 (or $162,000 if the Executive Deputy Chief position is not eliminated). Position reductions should be accomplished using attrition.

3.   **THE FIRE-RESCUE DEPARTMENT DEMONSTRATES A MIX OF SOME STRONG MANAGEMENT SYSTEMS AND OTHER OPPORTUNITIES FOR IMPROVEMENT.**

The project team examined key management systems relating in the Fire-Rescue Department. These systems are critical to ensuring that the Department operates both effectively and efficiently. The key elements of a successful management system for a Fire-Rescue agency include the following:

•   **Formal Interaction** – Does the management team interact in formal meetings (set times, regular schedule, with agendas, etc.)? Are different groups of managers brought together to focus on key issues, to communicate general issues, to work on budget information, etc.?

•   **Utilization of Data in Decision Making** – Does the Department make use of the data collected from all calls, quality assurance reviews, inspections, etc. to make informed decisions? Is the use of analytical methods regularly employed to make decisions regarding deployment, budgetary expenditures, etc.? Is there a culture of making decisions using analysis rather than anecdotal information?

•   **Accountability Mechanisms** – Is there a mechanism in place by which staff can be haled accountable for assignments made? Do these systems provide for accountability the same way throughout the organization?

•   **Formal Policies, Procedures and Protocols** – Are key policies, procedures and protocols formally documented? Are they regularly reviewed and updated? Does the review of these key documents involve a broadly based group? Are policies and procedures widely available to all staff? Is staff held accountable for compliance? Is there a formal "professional standards" function within the Department?

•   **Management Training** – Does the City and the Department provide formal training to officers as they are promoted and as part of their continuing education? Do officers receive advanced tactical training, risk management training, personnel policy updates, etc.?

- **Utilization of Technology** – Does the Fire-Rescue Department make maximum use of technology to enhance effectiveness and efficiency? Are current investments being used effectively? Has the Department planned to adopt technology in the future that will enhance services or management of services?

The project team has the following observations and findings regarding the

management of the Fire-Rescue Department:

- The Fire-Rescue Department uses a series of regular, formal meetings to manage operations. These include bi-weekly senior staff meetings, with agendas and minutes, daily operations meetings, weekly meeting within Administration, etc. These are standing meetings and are used to address issues, make assignments, review on-going projects and to convey information throughout the organization.

- The Fire-Rescue Department does not utilize data effectively for decision-making. While a number of regular (monthly, quarterly, etc.) reports are developed, few management decisions are driven by analysis of issues and alternatives. For example, while the City has adopted a range of formal performance standards for operations, the Department does not track performance (and hold officers accountable) for individual stations, units or calls.

- Accountability for assignments and tasks is managed by each individual manager. There is no central file for holding staff accountable for following-up on tasks and assignments. In our discussions with command staff, it is clear that this gap is well recognized and software has been identified which would enable staff to track a project throughout its life span (with access granted appropriate to the rank, assignment, etc. to protect confidential matters). Given the geographic size, impacts of shift operations and other factors, a more formal method for tracking assignments is critical for the Department to develop.

- EMS Protocols are up to date and are overseen by a medical director. Key issues are addressed either by federal or state regulators.

- Policies and procedures are generally concise, well organized and up to date. However, the Fire-Rescue Department does not have a formal and on-going process of reviewing policies annually.

- Policies and procedures are not reviewed for compliance with changes in the contract between the City and the bargaining unit.

- These critical documents are widely available to staff and are being distributed both hard copy and electronically.

• The Fire-Rescue Department does not have an early warning system in place by which minor issues can be tracked and potential major issues identified proactively. Neither does the Department have any single person who is responsible for tracking key personnel measures such as: grievances; use of sick leave; workers compensation claims, etc.

• Management training in the Department is largely conducted in an ad-hoc basis with staff attending conferences, participating in the US Fire Academy's Executive Fire Officer program, etc. Funding for these approaches has been increased in the most recent budget.

• Similarly, the FLFRD used to hold a 40-hour training "academy" for newly promoted Chiefs. Such training academies are a critical method for easing the transition from company officer to chief officer.

• The Fire-Rescue Department has sought to make use of technology in a wide range of applications. These include dispatch (in-vehicle computers with access to CAD, the internet, email, etc.), staffing (Telestaff – an automated phone calling staffing package), electronic patient condition reports (PCR's) using MEDUSA's tablet-based product – connected with the primary hospitals, etc. Many of these projects are in the implementation phase (last computers installed in units this year, upgrading Telestaff to address several issues, etc.).

• The project team found that Telestaff was not being used to its full capabilities by the FLFRD at this time – but that the upgrade planned for January 1, 2007 will address many issues (at this time, Telestaff is used as a record keeping system and as a linkage to the payroll system).

• The Department is clearly willing to consider alternative technologies and their use in the field. The Medical Director is also willing to consider a wide range of technological solutions and alternatives. One project under consideration would enable the FLFRD to provide in-unit video of patients to the emergency department at Broward General so physicians on staff could provide enhanced direction to paramedics en-route to the hospital.

• Issues with lack of technology in the Fire Prevention unit have been addressed elsewhere in this report. Inspectors have access to CAD via computers in their cars but cannot perform basic functions related to their jobs. Tablet bases solutions would enable them to enter reports, issue bills, etc. while on premises.

The project team has identified several issues that should be addressed by the management team of the Fire-Rescue Department. These include the following recommendations:

• The Fire-Rescue Department should develop an accountability system to ensure that all assignments are followed-up appropriately. A simple in-house system can be developed using common office programs until a more sophisticated system can be obtained. An electronic system is useful since issues can be sorted by due date, individual, status, etc. The tracking system should have (at minimum):

- Assignment

- Data assigned

- Due date

- Responsible Individual

• Key measures should be identified by the senior staff and tracked regularly. Examples might include:

- Reflex time (overall, by station, by unit, by major call type)

- Dispatch processing time

- Drive time

- Call concurrency

- Response times by time of day, etc.

- Number of inspections per inspector

• The Department should adopt a process of annual review for all policies and procedures. This process should include:

- Assigning each major policy or procedure to a chief officer.

- That chief officer can solicit opinions from others in the command staff, bargaining unit, etc.

- Feedback on each policy should be returned to the person coordinating the review.

- Policies with no changes should be updated with a "reviewed on" date assigned to it.

- Policies with suggested changes should be reviewed by senior staff and the bargaining unit before final approval by the Chief.

• The Fire-Rescue Department should examine the possibility of adopting an early warning system for tracking minor infractions (late to work, discourteous to a patient, etc.). These systems can provide invaluable in identifying changes in behavioral patterns that can be addressed proactively before a major infraction occurs.

• The Chief should work with senior staff and with City staff to develop command staff training. The core curriculum should focus on non-operational necessities such as personnel management, key legal issues (FMLA, FLSA, ADA), risk management, supervisory skills, etc. The provision of this training should be done with a combination of departmental and City resources.

• Telestaff has not been utilized by the Fire-Rescue Department to its full potential. Staff is still directly involved in making staffing decisions, making phone calls, soliciting overtime hires, etc. Division Chiefs spend an inordinate amount of time on these issues and on doing data entry into Telestaff <u>after</u> all staffing decisions have been made (because the system feeds into payroll). Senior staff should focus on a major change in the way in which staffing is handled on a daily basis with a clear directive that staff be more reliant on Telestaff and that the use of overtime Fire Lieutenants (from the off-going shift at Station 2/8) should be curtailed once the new update is in place. The potential cost savings from this could be almost $85,000 (six hours a day at an overtime rate of $39 per hour).

Recommendation: The Fire-Rescue Chief and command staff should address the issues raised in the preceding section. The primary benefit from making these changes is enhanced accountability and management effectiveness with projected annual fiscal savings of $85,000.

3. ANALYSIS OF OPERATIONS STAFFING AND CURRENT RESPONSE SYSTEM

This chapter provides the project team's analysis of staffing levels and current service levels provided by the Operations Division of Fort Lauderdale Fire-Rescue. This chapter focuses on a number of issues including the following:

- Are service levels consistent with workload demands, industry and national standards, and locally adopted service objectives?

- Are there gaps or areas of duplication in current service levels?

- Can current services be provided more effectively and/or efficiently?

- Is the current response network well positioned to handle future workload?

- Does the Department utilize an effective approach to operational line staffing and management of overtime? Is technology effectively utilized?

Each of these issues is address in the sections that follow. The first section, discusses the locally adopted service level objectives and national and industry standards for fire, rescue, and emergency medical services.

1. THE CITY OF FORT LAUDERDALE HAS ESTABLISHED PERFORMANCE OBJECTIVES FOR FIRE, RESCUE, AND EMERGENCY MEDICAL SERVICES.

The City of Fort Lauderdale has adopted several formal performance standards for the Fire Department. The adoption of performance standards for fire and EMS response is a critical first step in the evaluation of service levels and staffing alternatives. While there are national standards that can be used to evaluate fire and EMS service delivery, each community must identify the key risks and necessary level of protection it needs based on its own unique circumstances. Once these performance standards are

established a community can assess its performance and determine if current resources

support the desired level of service.

Nationwide, a great deal of effort and research has been put into developing

performance objectives for the delivery of fire and EMS services. This effort is critical

for agencies making decisions about deployment and location of emergency resources.

The objectives promoted for fire/rescue and EMS have their basis in research that has

been conducted into two critical issues:

•   What is the critical point in a fire's "life" for gaining control of the blaze while
        minimizing the impact on the structure of origin and on those structures around
        it?

•   What is the impact of the passage of time on survivability for victims of cardiac
        arrest?

The chart, that follows, shows a typical "flashover" curve for interior structure

fires. The point in time represented by the occurrence of "flashover" is critical because

it defines when all of the contents of a room become involved in the fire. This is also the

point at which a fire typically shifts from "room and contents" to a "structure" fire –

involving a wider area of the building and posing a potential risk to the structures

surrounding the original location of the fire.

Generalized Flashover Curve
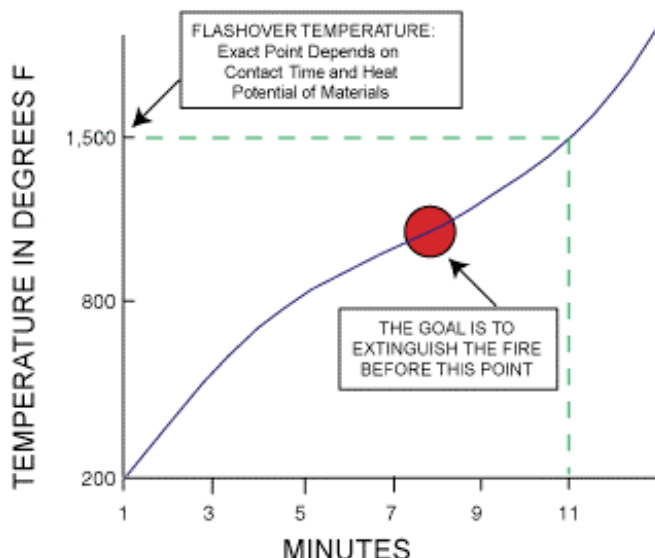
Note that this exhibit depicts a fire from the moment of inception – not from the moment that a fire is detected or reported. This demonstrates the criticality of early detection and fast reporting as well as rapid dispatch of responding units. This also shows the critical need for a rapid (and sufficiently staffed) initial response – by quickly initiating the attack on a fire, "flashover" can be averted. The points, below, describe the major changes that occur at a fire when "flashover" occurs:

- It is the end of time for effective search and rescue in a room involved in the fire. It means that likely death of any person trapped in the room – either civilian or firefighter.

- After this point in a fire is reached, potable extinguishers can no longer have a successful impact on controlling the blaze. Only larger hand-lines will have enough water supply to affect a fire after this point.

- The fire has reached the end of the "growth" phase and has entered the fully developed phase. During this phase, every combustible object is subject to the full impact of the fire.

- This also signals the changeover from "contents" to "structure" fire. This is also the beginning of collapse danger for the structure. Structural collapse begins to

become a major risk at this point and reaches the highest point during the decay stage of the fire (after the fire has been extinguished).

It should be noted that not every fire will reach flashover – and that not every fire will "wait" for the 8-minute mark to reach flashover. A quickly responding fire crew can do things to prevent or delay the occurrence of flashover. These options include:

•   Application of portable extinguisher or other "fast attack" methodology.

•   Venting the room to allow hot gases to escape before they can cause the ignition of other materials in the room.

•   Not venting a room – under some circumstances this will actually stifle a fire and prevent flashover from occurring.

Each of these techniques requires the rapid response of appropriately trained fire suppression resources that can safely initiate these actions. In the absence of automatic fire suppression systems, access to interior fires can again limited by a safety requirement related to staffing levels. OSHA and related industry standards require the presence of at least 2-firefighters on the exterior of a building before entry can be made to a structure in which the environment has been contaminated by a fire. In the absence of a threat to life demanding immediate rescue, interior fire suppression operations are limited to the extent a fire service delivery system can staff to assure a minimum of 4-people actively involved in firefighting operations. The second issue to consider is the delivery emergency medical services.   One of the primary factors in the design of emergency medical systems is the ability to deliver basic CPR and defibrillation to the victims of cardiac arrest. The exhibit, that follows, demonstrates the survivability of cardiac patients as related to time from onset:

% Survival Rate

This graph illustrates that the chances of survival of cardiac arrest diminish approximately 10% for each minute that passes before the initiation of CPR and/or defibrillation. These dynamics are the result of extensive studies of the survivability of patients suffering from cardiac arrest. While the demand for services in EMS is wide ranging, the survival rates for full-arrests are often utilized as benchmarks for response time standards as they are more readily evaluated because of the ease in defining patient outcomes (a patient either survives or does not). This research results in the recommended objective of provision of basic life support within 4-minutes of notification and the provision of advanced life support within 8 minutes of notification. The goal is to provide BLS within 6 minutes of the onset of the incident (including detection, dispatch and travel time) and ALS within 10 minutes. This is often used as the foundation for a two-tier system where fire resources function as first responders with additional (ALS) assistance provided by responding ambulance units and personnel.

Additional recent research is beginning to show the impact and efficacy of rapid deployment of automatic defibrillators to cardiac arrests. This research – conducted in King County (WA), Houston (TX) and as part of the OPALS study in Ontario, Canada –

shows that the AED can be the largest single contributor to the successful outcome of a cardiac arrest – particularly when accompanied by early delivery of CPR. It is also important to note that these medical research efforts have been focused on a small fraction of the emergency responses handled by typical EMS systems – non-cardiac events make up the large majority of EMS and total system responses and this research does not attempt to address the need for such rapid (and expensive) intervention on these events.

The results of these research efforts have been utilized by communities and first responders, often on their own with no single reference, to develop local response time and other performance objectives. However, there are now three major sources of information to which responders and local policy makers can refer when determining the most appropriate response objectives for their community:

- The Insurance Services Office (ISO) provides basic information regarding distances between fire stations. However, this "objective" does little to recognize the unique nature of every community's road network, population, calls for service, call density, etc.

- The National Fire Protection Association (NFPA) promulgated a documented entitled: "NFPA 1710: Objective for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments." This document (NFPA 1710) was published in 2001 and updated in 2004 – has and generated a great deal of dialogue and debate – which is still on going. This document is not a requirement for cities to follow – local authorities can and must determine for themselves an appropriate service level.

- The Commission on Fire Accreditation International (CFAI) in its "Objectives of Coverage" manual places the responsibility for identifying "appropriate" response objectives on the locality. These objectives should be developed following a comprehensive exercise in which the risks and hazards in the community are compared to the likelihood of their occurrence.

The City of Fort Lauderdale, with the guidance of the Fire-Rescue Department, has adopted several performance standards. These objectives include:

- **First Unit**: 6 minutes or less from dispatch to on-scene, 90% of the time.

- **First Paramedic Unit**: 8 minutes or less from dispatch to on-scene, 95% of the time. These can either be ambulance (Rescue) or Engine Companies.

- **First Medical Transportation Unit**: 10 minutes or less from dispatch to arrival on-scene, 95% of the time.

While the performance objectives are outside of those recommended by national organizations such as NFPA, these targets are appropriate. The City has identified the desired service levels based on risk levels, the frequency or relative infrequency of critical events such as cardiac arrest and large fires (which is the primary basis for NFPA standards), and desired levels of reliability (i.e. 90% vs. 95%). In addition to these standards, the project team recommends that the City adopt the following additional response time standards:

- One-minute dispatch processing time, from call receipt to dispatch, 90% of the time. This target is a general "best practice" for emergency communications and ensures the most effective fire department response.

- One-minute "reflex" time, from dispatch to a unit going "en-route", 90% of the time. Again, this is a general "best practice" and ensures the most rapid response to emergency incidents. This element of time is found in the current standards, adopted by the City, but should be explicitly stated and tracked.

The standards discussed above were utilized by the project team to evaluate the response capabilities of FLFR. The next section describes the method utilized to evaluate response performance.

Recommendation: The City of Fort Lauderdale should adopt performance standards for response time including a one-minute standard for dispatch processing and a one-minute standard for "reflex" time. These are critical elements of emergency response time and for the effective management of the Fire-Rescue Department.

2. **WHILE FORT LAUDERDALE FIRE-RESCUE'S STATION NETWORK IS WELL DESIGNED TO PROVIDE A HIGH LEVEL OF SERVICE TO THE CITY, THERE ARE GAPS IN CURRENT RESPONSE CAPABILITIES.**

The project team utilized two methods to assess the Department's performance against response time objectives. The first utilizes a GIS model to evaluate the potential response capabilities given current station locations and unit deployment. The second utilizes actual call for service data to calculate the percentage of incidents responded to within the stated objectives. The two approaches are utilized to compare potential and actual response capabilities and to identify potential response impediments, such as concurrent calls for service, poor reflex times, extended drive times, traffic, etc.

(1) **The Department's Current Response System is Well Designed to Provide a High Level of Service to the City of Fort Lauderdale.**

Matrix Consulting Group utilized GIS (geographic information systems) technology to evaluate unit deployment, station locations, and Fort Lauderdale Fire-Rescue's ability to meet the City's response targets. The GIS analysis is based on a number of steps and assumptions including the following:

- An up to date street centerline file was obtained from the City's IT Department that contains detailed information on local roads, arterials, restrict access roads, and address ranges. Streets were assigned an average speed limit to predict response capabilities of the Department. The project team used the following assumptions in assigning speed limits:

    - Semi-limited access roads (e.g. highways and freeway) were assigned an average speed of 35 miles per hour.

    - All other road classifications (arterials, collectors, local streets) were assigned an average speed of 25 miles per hour.

- Three years of call for service data were "geocoded," or matched digitally, to the street centerline file using address information provided by CAD. Approximately 94% of all calls for service were matched to the street centerline file.

- Station locations were matched to the street file and verified. Unit and personnel deployment information was attached to each station location.

- The response time objectives discussed in the previous section were modified to allow one minute of reflex time. As a result, note the following:

  - The first unit on scene objective was modified to five minutes of drive time.

  - The first paramedic unit on scene objective was modified to seven minutes of drive time.

  - The first transport unit on scene was modified to nine minutes of drive time.

- Maps and statistics were generated that demonstrate the projected response capabilities of the current station network.

The project team first evaluated the Department's ability to provide an initial responding unit within six minutes from dispatch, or five minutes of drive time. The maps, on the following pages, depict the number of units capable of responding to various areas of the City within this time frame.

City of Fort Lauderdale, Florida
Potential Units Responding at 5 Minutes of Drive Time

City of Fort Lauderdale, Florida
Potential Units Responding at 5 Minutes of Drive Time - North
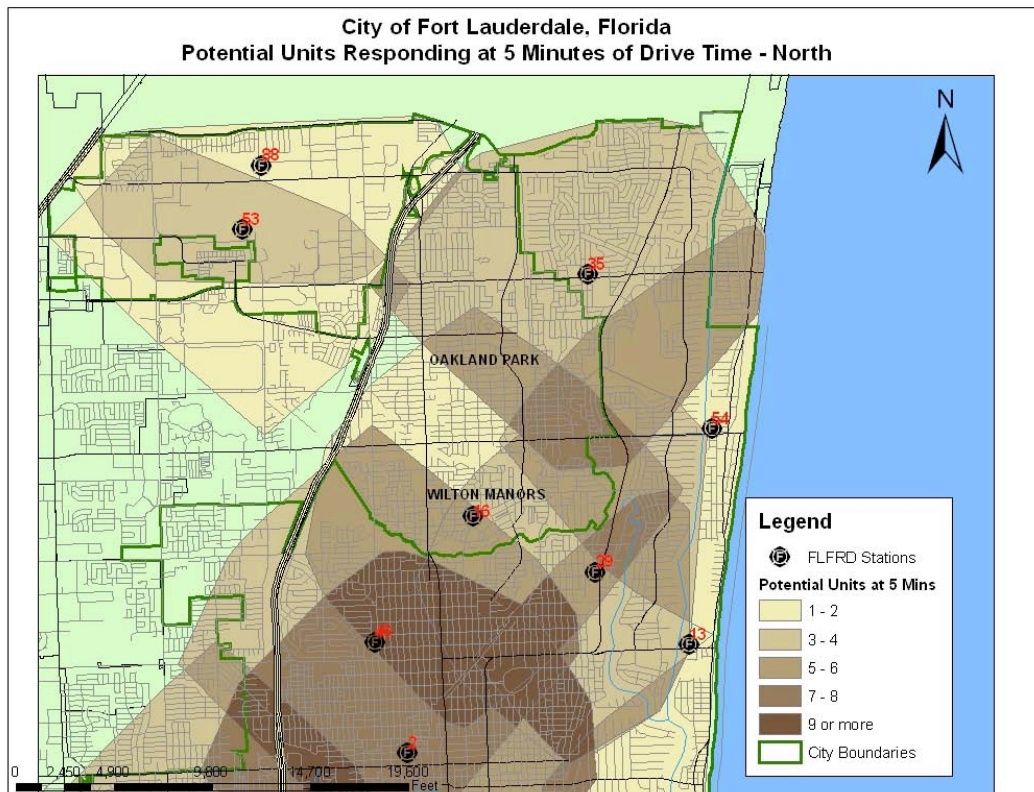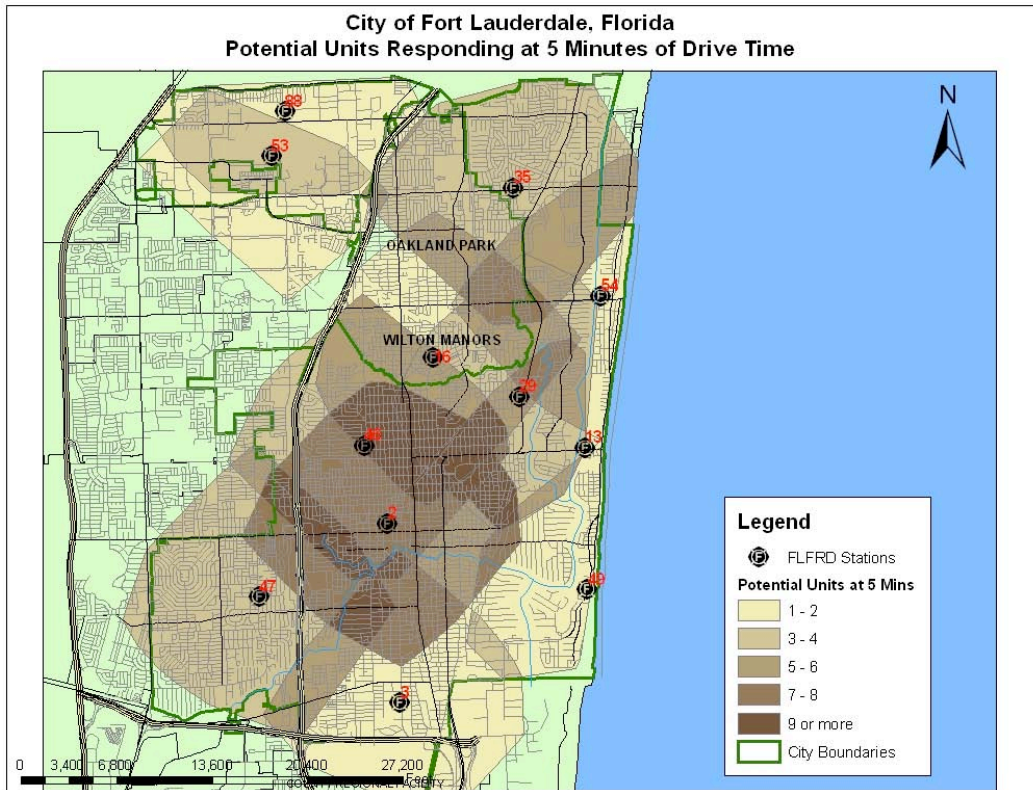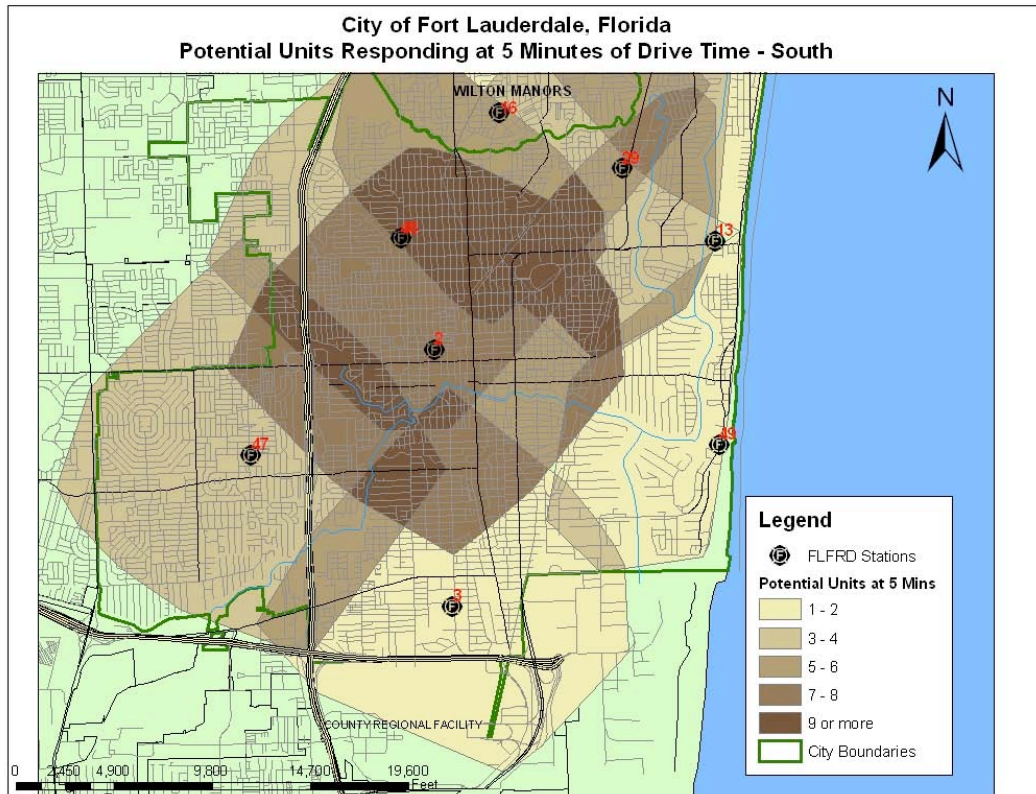
As shown above, the Department is capable of providing a significant number of units to a large portion of the City within five minutes of drive time. The ability to provide multiple units to busy areas of the City is critical for handling concurrent (i.e. simultaneous calls for service within a units first due area. The table, below, provides a quantitative assessment of first unit response capabilities based on 2005-06 calls for service:

Fort Lauderdale Fire-Rescue
Potential Units Responding at 5 Minutes of Drive Time

Units	Calls	%
At least 1	34,378	97%
2 Units	34,378	97%
3 Units	28,567	81%
4 Units	21,413	61%
5 Units	19,853	56%
6 or more	15,640	44%
Total Calls	**35,276**	**100%**

The following points highlight the information in the table above:

• Approximately 97% of calls for service from September 1, 2005 to August 31, 2006 could be reached by at least one unit within five minutes of drive time. Two units could reach the same proportion of calls.

• The system is capable of providing a significant level of overlap. Approximately 81% of calls could be reached by three units, 61% of calls could be reached by four units, 56% could be reached by five units, and 44% could be reached by six or more units. This is significant given that the Department handles an average of three to seven calls each hour, most of which require multiple units.

Overall, the system is capable of meeting the 95% target for an initial response within five minutes of drive time. The next set of maps shows the Department ability to provide a paramedic unit within eight minutes, or seven minutes of drive time.

City of Fort Lauderdale, Florida
Potential Paramedic Units Responding at 7 Minutes Drive Time - North

City of Fort Lauderdale, Florida
Potential Paramedic Units Responding at 7 Minutes Drive Time - South
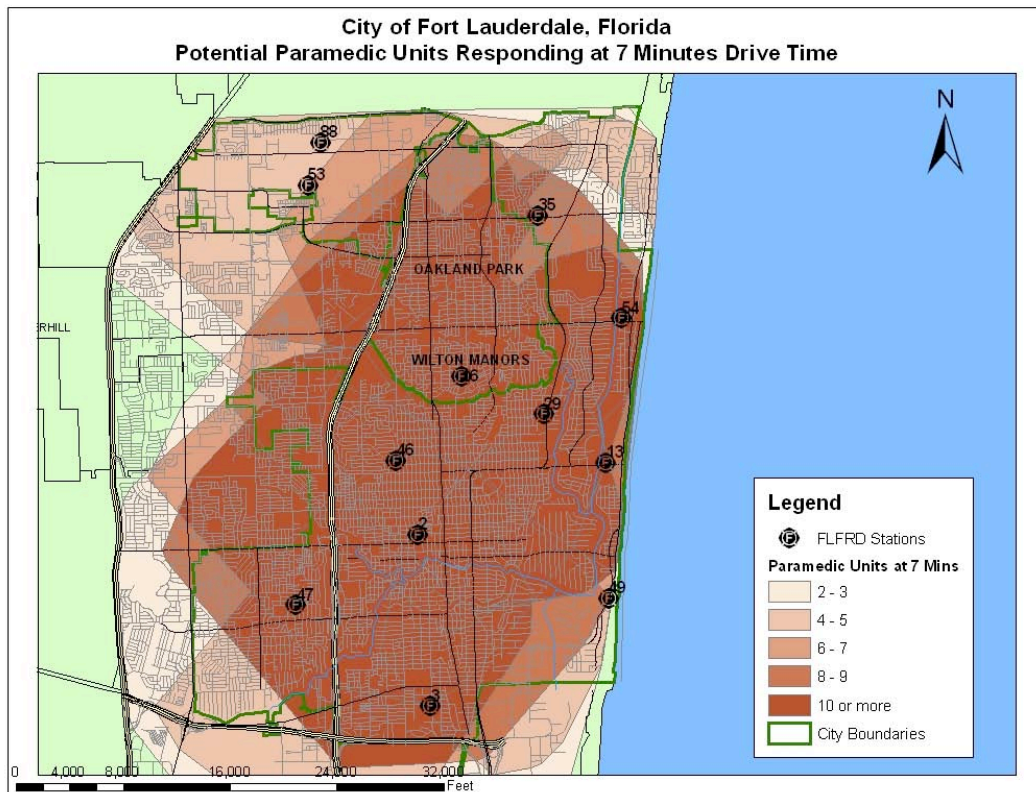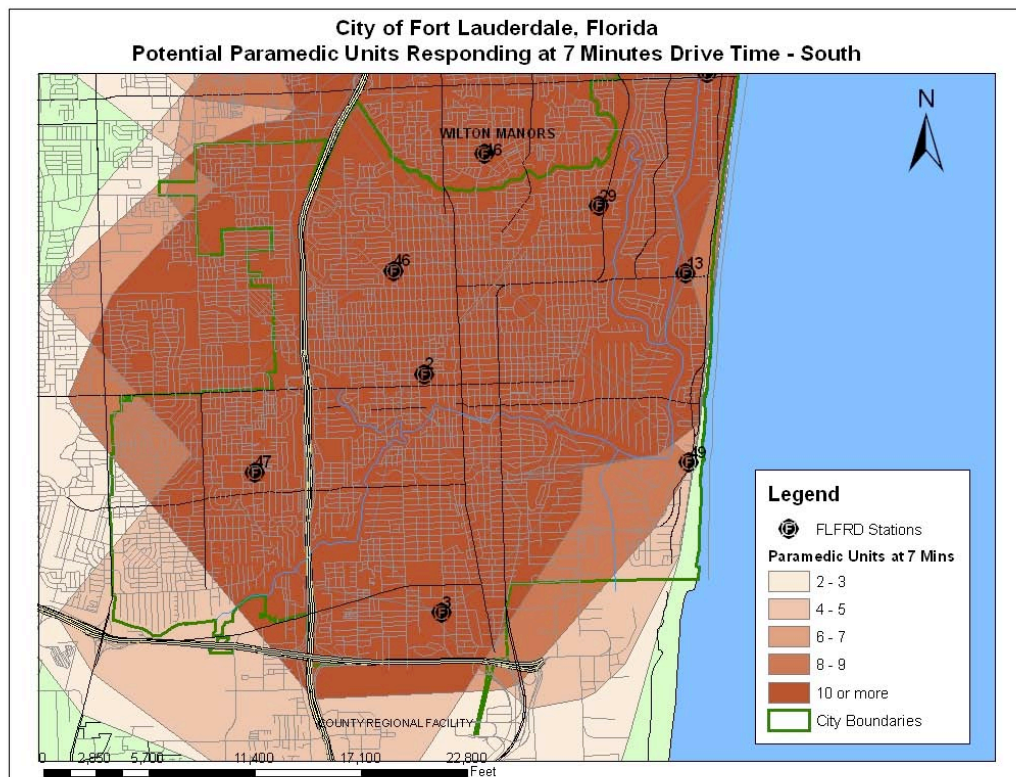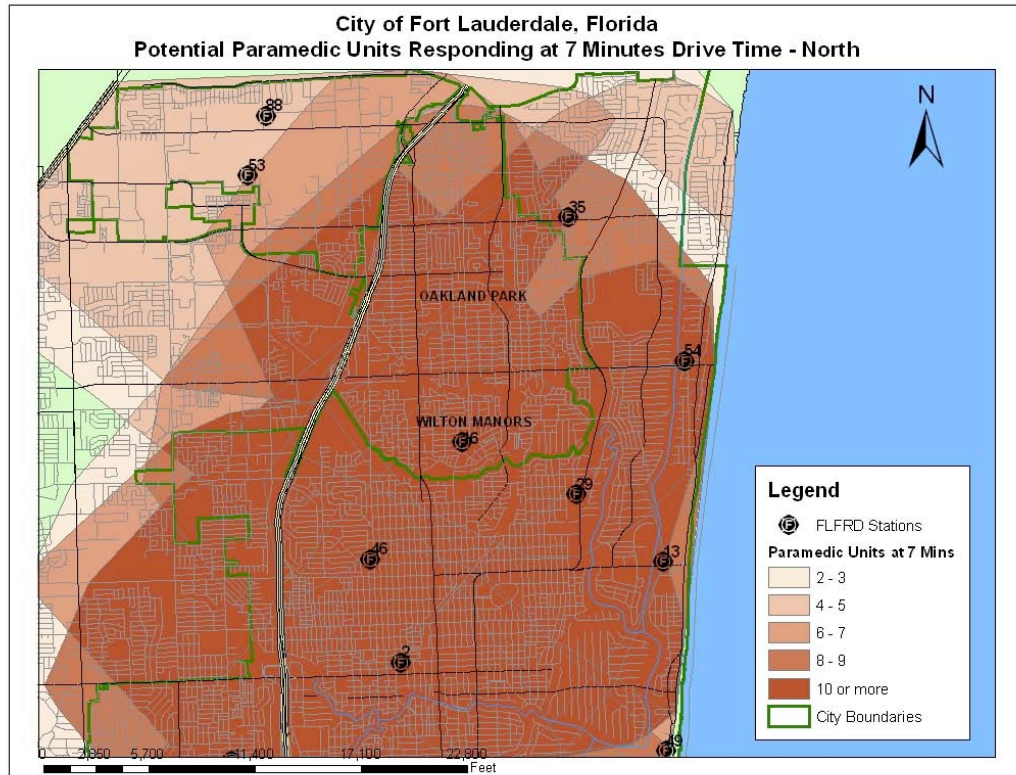
The maps, above, indicate that the Department is capable of providing multiple paramedic units to the vast majority of the City within seven minutes of drive time. The table, below, provides statistics, which describe response capabilities against the first paramedic unit objective:

Fort Lauderdale Fire-Rescue
Potential Paramedic Units Responding at 7 Minutes of Drive Time

Units	Calls	%
1 or more	35,270	100%
2 or more	35,268	100%
3 or more	34,617	98%
4 or more	34,395	98%
5 or more	32,533	92%
6 or more	32,069	91%
7 or more	31,548	89%
Total Calls	**35,276**	**100%**

Note that approximately 100% of calls for service can be reached by at least one paramedic unit within seven minutes of drive time, assuming they are available in their respective stations. A factor in the high level of service is the deployment of paramedics on all Rescue and Engine companies in the City. Also note that four or more units are capable of reaching 98% of calls for service, and seven or more paramedic units are capable of reaching 89% of calls for service. The GIS model indicates that the 95% target for eight-minute paramedic response, assuming one minute of reflex time, can be met. It also indicates that the Department has significant resources to handle multiple calls for service occurring at the same time.

The final set of maps depicts the ability to deliver a paramedic transport unit within ten minutes, or nine minutes of drive time. Once again, the number of transport units capable of responding within nine minutes, assuming they are available and in their stations, is illustrated, below:

City of Fort Lauderdale, Florida
Potential Rescue Units Responding at 9 Minutes Drive Time - North

City of Fort Lauderdale, Florida
Potential Rescue Units Responding at 9 Minutes Drive Time - South
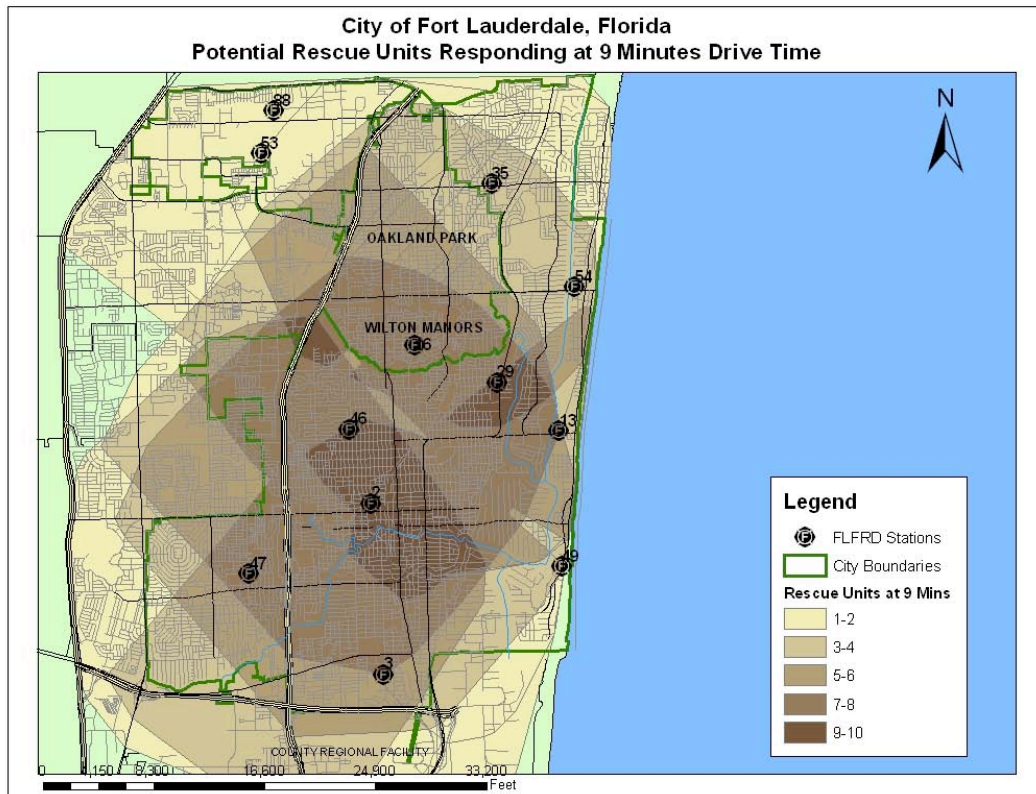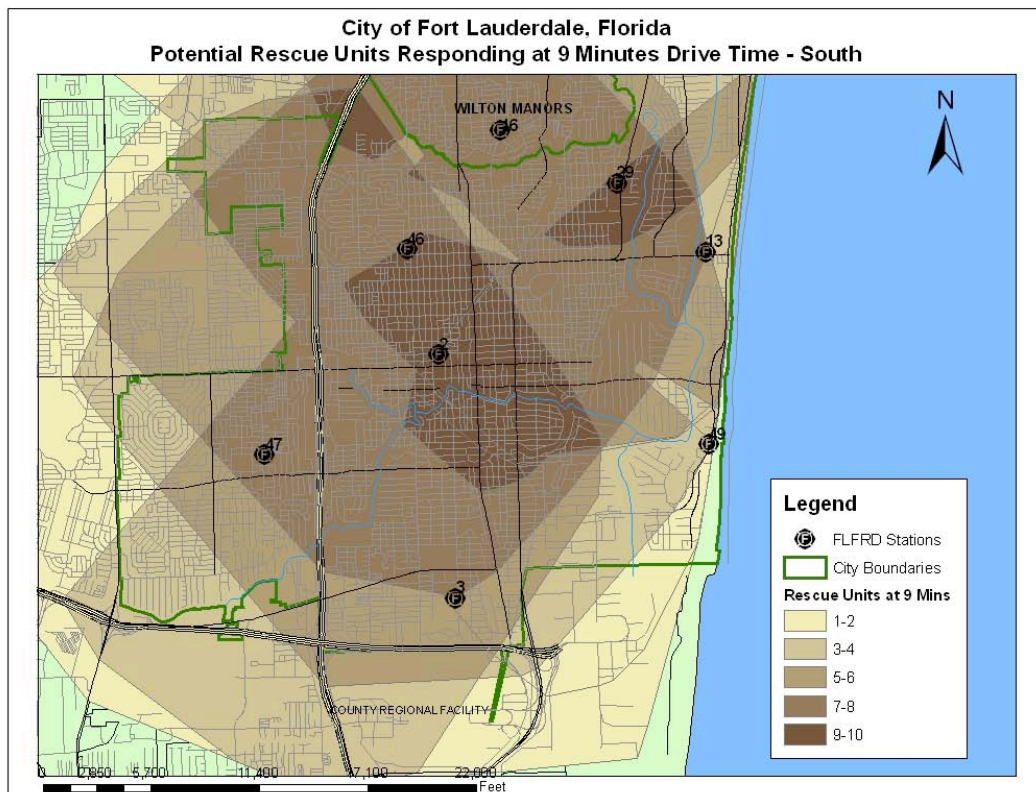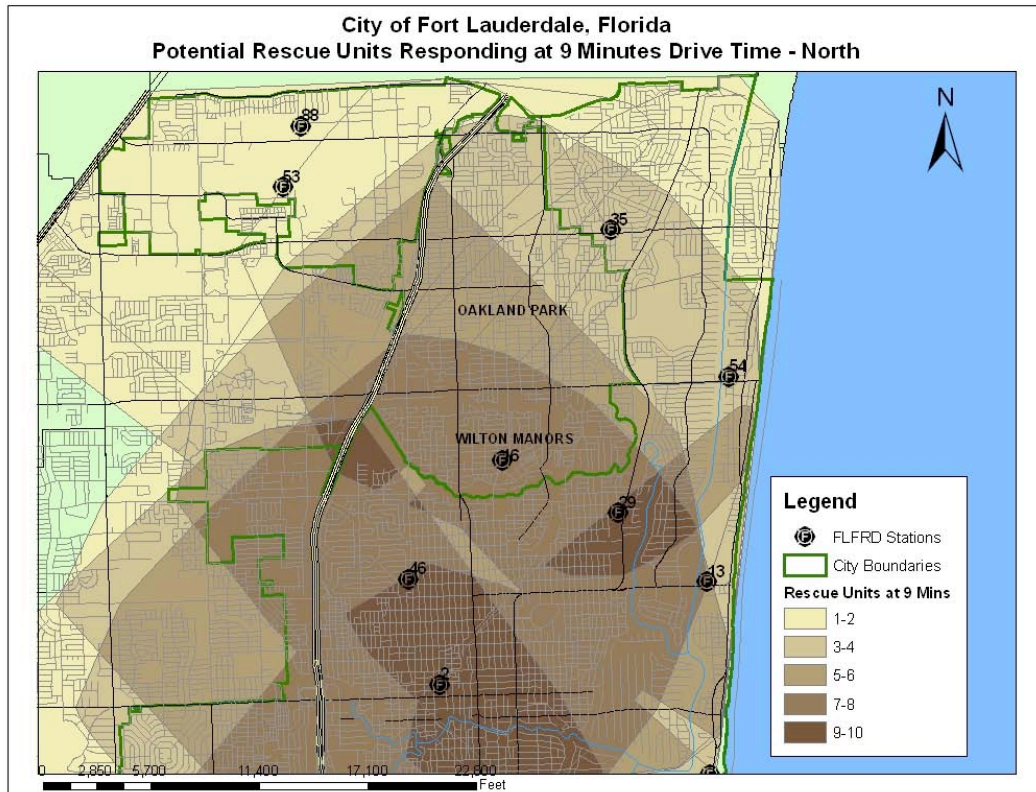
As shown, above, there is significant overlap in transport units that are capable of responding within nine minutes of drive time. The table below illustrates performance against the ten-minute transport metric:

Fort Lauderdale Fire-Rescue
Potential Transport Units Responding at 9 Minutes of Drive Time

Units	Calls	%
1 or more	35,270	100%
2 or more	34,567	98%
3 or more	32,388	92%
4 or more	29,843	85%
5 or more	27,277	77%
6 or more	24,455	69%
7 or more	22,620	64%
Total Calls	**35,276**	**100%**

The table, above, indicates that approximately 100% of calls for service could be reached by at least one transport unit within nine minutes of drive time. In addition, three or more units are capable of responding to 92% of calls for service, and seven or more units are capable of reaching 64% of 2005-06 calls. Once again, the GIS model indicates that the Department is capable of meeting adopted performance targets for first unit response, paramedic unit response, and transport unit response. The next section discusses actual historical response performance based on data received from the emergency communications center.

(2)   Call for Service Data Indicate Fort Lauderdale Fire-Rescue is Not Meeting Adopted Performance Objectives.

The project team collected call for service data for several years, covering the period September 1, 2003 to August 31, 2006. These data were evaluated to document response times achieved by the Department for three periods, September 1, 2003 to August 31, 2004, September 1, 2004 to August 31, 2005, and September 1, 2005 to August 31, 2006. Each of the response targets discussed in the previous section was

evaluated. The first table, below, shows average response times for each of the three

periods:

Fort Lauderdale Fire-Rescue
Average Response Times (Minutes) Achieved, Sept. 1, 2003 to Aug. 31, 2006

Response Time Element	2003-04	2004-05	2005-06	03-06 % Change
Avg. Dispatch	1.61	1.81	1.86	16%
Avg. Reflex	1.62	1.76	1.87	15%
Avg. Drive	2.87	3.10	3.40	18%
Avg. Total FD Response	4.49	4.86	5.27	17%
First Paramedic Unit Avg.	4.49	4.89	5.30	18%
Paramedic Unit Drive Avg.	2.86	3.11	3.42	20%
First Transport Unit Avg.	4.94	5.37	5.86	19%
Transport Unit Drive Avg.	3.28	3.53	3.91	19%

The following points highlight the information above:

- The average time required to dispatch a priority call for service ranged from 1.6 minutes in 2003-04 to 1.86 minutes in 2005-06. This represents an increase of approximately 16% over the three-year period.

- The average time between dispatch and the first unit going en-route ranged from 1.62 minutes during 2003-04 to 1.87 minutes in 2005-06. Average reflex times increased by approximately 15% over this period.

- The average time between the first unit going en-route to arrival on-scene also increased over the three-year period, from 2.87 minutes in 2003-04 to minutes 3.40 in 2005-06. Average drive time increased by 18% from 2003 to 2006.

- Total fire department response time, defined as the time between dispatch and arrival of the first unit on-scene increased by 17% over the three-year period, from approximately 4.5 minutes to 5.3 minutes.

- The average time between dispatch and arrival on scene by a paramedic unit increased by 28% over the three-year period, from 4.5 minutes to 5.3 minutes.

- Paramedic drive time, which represents the time between a paramedic unit going en-route and arriving on-scene, also increased from 2003 to 2006 by approximately 20% from 2.9 minutes to 3.4 minutes.

- The average time between dispatch of a transport unit and arrival on scene also increased by approximately 20% over the three-year period, from approximately 5.0 minutes to 5.9 minutes. Transport unit drive time, experienced the same increase over the three period.

As shown, above, the Department's response times, on each measure, have increased measurably over the past three years. This may be due to a number of reasons including: an increase in the number of calls for service, and therefore a decrease in the availability of units, concurrent calls for service (i.e. multiple calls for service in a units first due area, increased traffic, an increase in non-emergency workload (i.e. prevention activities, station and equipment maintenance), etc. These potential causes are explored, later in this section.

The next table, below, shows fractile performance against the recommended and locally adopted performance objectives over the same period:

Fort Lauderdale Fire-Rescue
Fractile Performance Against Adopted and Recommended Targets

Response Time Element	2003-04	2004-05	2005-06	03-06 % Change
% Dispatch < 1 Min	38%	31%	28%	-26%
% Reflex < 1 Min	24%	22%	21%	-13%
% Drive < 5 Min	91%	89%	84%	-8%
% FD Total < 6 Min	84%	78%	70%	-17%
Paramedic Unit < 8 Min	96%	93%	90%	-6%
Paramedic Unit Drive < 7 Min	98%	96%	95%	-3%
First Transport Unit < 10 Min	97%	97%	93%	-4%
First Transport Unit Drive < 9 Min	99%	98%	96%	-3%

The following points summarize the table, above:

• Approximately 28% of all emergency calls dispatched during 2005-06 were dispatched within one minute or less. This figure represents a decrease in performance of 26%. This figure is also well below the 90% recommended target.

• Approximately 21% of all emergency calls were responded to within one minute of reflex time during 2005-06, a decrease of 13% from 2003-04. This is again, well below the recommended target of 90%.

• Approximately 84% of emergency calls received a five-minute response from the first unit going en-route to arrival on scene. This represents a decrease of 8% from 2003-04 when 91% of calls were reached within five minutes of drive time.

• Approximately 70% of all calls during 2005-06 were responded to within six minutes from dispatch to arrival on scene. Again, this represents a decrease of

17%. Note that the large decline in performance is largely due to the decrease in reflex time performance.

• Approximately 90% of calls during 2005-06 were responded to within eight minutes by a paramedic unit from dispatch to arrival on-scene. This represents a decrease of 6% from 2003-04. Note that 95% of calls were reached by a paramedic unit within seven minutes of drive time. This indicates that extended reflex times are reducing performance. It is also interesting to note that paramedic drive time, decreased from 98% to 95% over the three-year period.

• Approximately 93% of calls during 2005-06 were responded to within ten minutes by a transport unit from dispatch to arrival on-scene. Note that performance has decreased by 3% over the period. Also note, that transport unit drive time (ten minute standard less one minute for reflex), was 96% during 2005-06.

Overall, the Department is not meeting most of the recommended and adopted performance objectives including dispatch processing, reflex time, five minute initial response time, paramedic unit response time, and transport unit response time. A significant, if partial, explanation for the poor performance is the poor (and worsening) reflex times. As shown above, drive time performance for the initial responding unit, first paramedic unit, and first transport unit is markedly better than response times which include reflex time.

(3) Call Concurrency Seems a Likely Explanation for Worsening Drive Time Performance. Other Factors Appear to Impact Total Response Time.

The project team first considered the explanation of increased traffic as a cause of extended response times. In order to evaluate this hypothesis, the team looked at the distribution of response times by hour of day. Traffic problems are likely to occur during the early morning and late afternoon/early evening (i.e. rush hours). If traffic is the reason for increased response times, the project team reasoned that there should be a marked difference in response times during peak and non-peak travel times. The table, below, shows five-minute drive time performance by hour of day from 2003 to 2006:

Fort Lauderdale Fire-Rescue
% of Calls Reached in 5 Minutes Drive Time, 2003 to 2006

Hour	2003-04	2004-05	2005-06
0000	90%	89%	88%
0100	93%	88%	83%
0200	90%	87%	83%
0300	91%	88%	81%
0400	93%	86%	79%
0500	89%	86%	80%
0600	89%	88%	80%
0700	90%	88%	85%
0800	93%	89%	86%
0900	91%	88%	85%
1000	90%	88%	83%
1100	92%	89%	86%
1200	91%	87%	84%
1300	92%	89%	85%
1400	91%	89%	83%
1500	90%	87%	82%
1600	91%	87%	85%
1700	91%	89%	83%
1800	93%	90%	86%
1900	91%	89%	85%
2000	91%	90%	86%
2100	92%	90%	86%
2200	92%	91%	88%
2300	93%	90%	86%

As shown, above, performance does not change significantly during busy traffic hours. In addition, the change in performance from 2003 to 2006 is fairly consistent across the hours of the day. It is not likely that traffic is the primary reason for extended response times given the uniformity in drive time performance. However, it is interesting to note that reflex time varies markedly over the course of the day, as shown in the table, which follows:

Fort Lauderdale Fire-Rescue
% of Calls Where Reflex Time
< 1 Min by Hour, 2003 to 2006

Hour	2003-04	2004-05	2005-06
0000	12%	11%	11%
0100	9%	8%	8%
0200	11%	9%	9%
0300	8%	11%	11%
0400	6%	7%	7%
0500	5%	6%	6%
0600	8%	7%	7%
0700	11%	10%	10%
0800	22%	20%	20%
0900	34%	29%	29%
1000	35%	32%	32%
1100	33%	31%	31%
1200	28%	29%	29%
1300	28%	23%	23%
1400	29%	27%	27%
1500	29%	27%	27%
1600	30%	29%	29%
1700	30%	27%	27%
1800	28%	25%	25%
1900	28%	23%	23%
2000	26%	23%	23%
2100	25%	22%	22%
2200	19%	17%	17%
2300	12%	12%	12%

As shown, above, reflex time performance, while poor throughout the day, declines even further during the hours of the day from 2300 – 0700. Reflex time is a critical component of response time and efforts should be made to significantly improve performance on this measure.

The project team next tested the hypothesis that additional workload during the tourist season is causing the decrease in response time performance. The table, on the following page, shows drive time fractiles by month over the three-year period:

Fort Lauderdale Fire-Rescue
% of Calls Reached in 5 Minutes
Drive Time by Month, 2003 to 2006

Month	2003-04	2004-05	2005-06
Jan	91%	89%	86%
Feb	91%	89%	84%
Mar	92%	88%	85%
Apr	92%	89%	86%
May	92%	89%	84%
Jun	91%	88%	85%
Jul	90%	88%	85%
Aug	90%	85%	85%
Sept	92%	88%	87%
Oct	92%	90%	82%
Nov	91%	90%	81%
Dec	92%	89%	85%

Note that performance does not change significantly from month to month. It is interesting to note however, that performance was lowest during October and November of 2005 – a period when the City dealt with multiple hurricanes. Also note that the decline in response time performance has remained consistent from year to year across months. Again, this appears to indicate that seasonal tourism is not a measurable cause of extended response times.

The project team also evaluated the level of concurrency, or simultaneous calls for service occurring in the same first due area, from 2003 to 2006. Concurrency impacts response times because the closest unit is not available to respond to a call. Due to the size of the data sample collected, the project team utilized the first eight months of each year – 2004, 2005, and 2006 to evaluate concurrency. These data are shown in the table, on the following page:

Fort Lauderdale Fire-Rescue
Concurrent Calls for Service by First Due Station

Station	2004	2005	2006	% Change
2 / 8	1,119	1,146	1,237	11%
46	611	612	823	35%
3	222	216	207	-7%
35	134	139	157	17%
47	181	194	143	-21%
29	124	101	121	-2%
16	39	59	78	100%
88	53	66	57	8%
54	63	76	50	-21%
49	67	49	42	-37%
13	29	21	29	0%
53	-	1	-	NA
Total	2,642	2,680	2,944	11%

The following points highlight the information above:

• The Department was busy responding to another call for service within the same response district 2,642 times during the first eight months of 2004. During 2006, a concurrent call for service occurred 2,944 times, an increase of approximately 11%.

• The district with the largest share of concurrent calls was Station 2's area, followed by Station 46 and Station 3.

• The overall concurrency rate over the three-year sample period was 11%. This means that of the 115 calls received on average each day, approximately 13 occurred in the same district while another incident was in progress.

Overall, there has been an increase in concurrent calls for service over the three-year period. This has an impact on fire department operations as units are out of position to respond to calls for service since they may be responding to calls outside of their district because the closest unit or units are already busy. As an illustration, the project team summarized those calls not reached within the five-minute initial drive time target by the first due station (i.e. closest station assigned in CAD) and station actually sent for 2003-04 and 2005-06:

Fort Lauderdale Fire-Rescue
Calls Not Reached within 5 Minutes Drive Time by First Due Station and Station Sent
Sept. 1, 2003 to August 31, 2004

Station Sent	First Due Area												
	13	**16**	**2/8**	**29**	**3**	**35**	**46**	**47**	**49**	**53**	**54**	**88**	**Total**
13	62	1	3	32	7	3	2	0	33	0	26	1	**170**
16	3	67	10	37	1	7	131	0	0	2	4	11	**273**
2/8	2	2	392	15	57	0	149	52	17	0	0	1	**687**
47	0	0	18	0	23	1	65	238	0	0	0	0	**345**
29	4	15	10	53	0	5	4	0	1	0	4	2	**98**
3	0	0	16	0	174	0	2	6	5	0	0	0	**203**
35	0	1	2	1	0	229	0	1	0	5	10	84	**333**
46	2	9	18	14	2	0	294	2	0	0	0	6	**347**
49	10	0	11	1	52	0	0	0	101	0	1	0	**176**
53	0	1	0	0	0	7	6	0	0	11	0	61	**86**
54	8	6	0	29	0	26	1	0	4	0	72	1	**147**
88	0	1	0	0	0	3	1	0	0	5	0	122	**132**
Total	**91**	**103**	**480**	**182**	**316**	**281**	**655**	**299**	**161**	**23**	**117**	**289**	**2,997**

Fort Lauderdale Fire-Rescue
Calls Not Reached within 5 Minutes Drive Time by First Due Station and Station Sent
Sept. 1, 2005 to August 31, 2006

Station Sent	**13**	**16**	**2**	**29**	**3**	**35**	**46**	**47**	**49**	**53**	**54**	**88**	**Total**
13	124	6	21	74	3	2	7	1	59	0	40	1	**338**
16	2	141	11	75	2	18	143	0	1	0	5	17	**415**
2	0	11	1,050	21	96	2	202	89	27	0	0	0	**1,498**
47	0	0	115	0	57	0	67	504	1	0	0	1	**745**
29	3	17	18	88	2	16	6	0	1	0	8	2	**161**
3	0	0	30	0	240	0	0	16	9	0	0	0	**295**
35	1	8	1	6	0	322	0	0	0	10	30	80	**458**
46	1	32	68	42	2	1	945	4	0	0	0	3	**1,098**
49	8	0	8	2	95	1	0	0	164	0	4	0	**282**
53	0	1	0	1	0	7	6	1	0	7	0	93	**116**
54	14	12	1	48	1	47	1	0	2	0	138	2	**266**
88	0	1	1	0	0	4	0	0	0	10	0	207	**223**
Total	**153**	**229**	**1,324**	**357**	**498**	**420**	**1,377**	**615**	**264**	**27**	**225**	**406**	**5,895**

The following points summarize the information, above:

- As shown above, during 2003-04, station 46's first due area received the largest number of calls that were not reached within five minutes of drive time by the first arriving unit. Of these calls, only 45% or 294 calls were actually responded to by a unit from station 46. The second largest number of calls occurred in Station 2's first due area at 480.

- During 2005-06, stations 46's area received 1,377 calls for service that were not reached within five minutes of drive time by the first arriving unit. Of these calls, 67% were responded to by a unit from Station 46. Station 2's area received 1,324 calls for service during 2005-06 that were not reached within five minutes of drive time. Of these calls, approximately 79% were responded to by a unit from station 2.

Overall, the increase in response times is likely due to increased workload, additional concurrent calls for service, and units outside the district where a call occurs responding. Unit availability will be further examined in the sections that follow. While there are a number of factors influencing response time, it is clear from the data above that the Department needs to improve dispatch processing time and reflex times. These are response time elements within the control of the Department and can significantly improve response time performance.

Recommendation: The Department should monitor dispatch processing times and reflex times to ensure compliance with the one-minute targets. This should be done by focusing on shift, station, unit and even individual calls for service.

3. **SOME OPERATIONS PERSONNEL ARE HIGHLY UTILIZED WHILE OTHERS ARE NOT.**

An important element of evaluating staffing requirements is to assess the utilization of personnel. This analysis identifies workload demands and compares them to actual staff availability. This exercise quickly recognizes which resources are over or under utilized and identifies where capacity exists.

The project team considered the following elements in evaluating personnel utilization:

- Total daily schedule hours. Operations personnel work 24 hour shifts, for an average of 48 hours each week (recall that there is a "Kelly" day in the cycle).

- Time needed for sleep, meals, and general administration. This time was estimated at eleven hours each day.

- Time needed for equipment, vehicle, and station checks and preventive maintenance. This time was estimated at one hour each day.

- Total available time after accounting for sleep, meals, administration, and maintenance activities is estimated at 12 hours each day.

- Time spent handling call for service workload. For each unit, the project team determined average handling time, defined as the time between dispatch and a unit clearing a call. In addition, approximately 15 to 20 minutes is added to call handling time for decontamination (i.e. cleaning ambulance units), re-supply of equipment and supplies, and general activities required to prepare for the next call for service. Average handling time was calculated for engine companies and rescue units separately since ambulance units are more likely to spend additional time at the hospital, transporting patients, and preparing reports. Average handling time for rescue units was estimated at one hour per call, while non-ambulance units was estimated at forty-five minutes.

- Time spent training. Training data indicate that an average of approximately thirty minutes each day, per company, is spent training. This is a fairy low figure for training needs. The project team typically recommends a daily training target of two hours.

- Time spent performing fire prevention activities including pre-fire plans, stand-pipe tests, new construction inspections, etc. The project team utilized a target of one hour each day. However, this workload was attributed to non-rescue units only since the majority of the ambulance workload is EMS related.

Based on the factors above, the project team calculated the average daily utilization of Fire-Rescue companies within the Department. These data are shown below:

Fort Lauderdale Fire-Rescue
Company Utilization

Unit	05-06 Runs	Avg./Day	Handling Time	Training	Prevention	Total Hours	Utilization
RE46	4,070	11.15	11.15	2		13.15	110%
RE2	4,056	11.11	11.11	2		13.11	109%
RE8	3,951	10.82	10.82	2		12.82	107%
EN46	4,741	12.99	8.57	2	1	11.57	96%
EN2	4,577	12.54	8.28	2	1	11.28	94%
EN8	4,253	11.65	7.69	2	1	10.69	89%
RE246	3,066	8.4	8.4	2		10.4	87%
RE16	2,850	7.81	7.81	2		9.81	82%
RE3	2,586	7.08	7.08	2		9.08	76%
EN47	3,194	8.75	5.78	2	1	8.78	73%

Unit	05-06 Runs	Avg./Day	Handling Time	Training	Prevention	Total Hours	Utilization
RE35	2,486	6.81	6.81	2		8.81	73%
RE47	2,300	6.3	6.3	2		8.3	69%
RE247	2,289	6.27	6.27	2		8.27	69%
EN16	2,770	7.59	5.01	2	1	8.01	67%
RE54	2,192	6.01	6.01	2		8.01	67%
EN3	2,749	7.53	4.97	2	1	7.97	66%
EN29	2,637	7.22	4.77	2	1	7.77	65%
EN35	2,556	7	4.62	2	1	7.62	64%
RE13	2,012	5.51	5.51	2		7.51	63%
QT2	2,357	6.46	4.26	2	1	7.26	61%
EN54	2,073	5.68	3.75	2	1	6.75	56%
EN88	1,940	5.32	3.51	2	1	6.51	54%
RE53	1,548	4.24	4.24	2		6.24	52%
EN49	1,750	4.79	3.16	2	1	6.16	51%
RE49	1,523	4.17	4.17	2		6.17	51%
QT35	1,499	4.11	2.71	2	1	5.71	48%
QT13	1,333	3.65	2.41	2	1	5.41	45%
EN13	1,188	3.25	2.15	2	1	5.15	43%

The following points summarize the table above:

• Average utilization varies significantly by unit. Not surprisingly, utilization levels are highest amongst the rescue units, particularly Rescues 46, 2, and 8 which are utilized between 107% and 110% of the time. Note that these levels are currently managed by reducing the number of daily training hours, sleep, and other administrative time.

• Utilization levels are lowest amongst engine and rescue companies near the beach and executive airport, and ladder trucks. Utilization levels amongst these units range from a low of 43% (engine 13) to 73% (rescue 35). Given these levels, it is critical that the Department ensure these units are utilized to handle additional non-emergency workload including pre-incident plans and simple fire inspections, training, and other activities.

• Best practices suggest that personnel should be utilized approximately 90% of available time. As shown above, only seven units meet or exceed this target.

Overall, the units within the busiest areas – Station 2, 8, and 46 are the highly utilized, while the beach units, and units far North and South are less utilized. Given the disparity in daily workload, the Department should consider rotating personnel from less busy stations to busy stations. In addition, the Department should ensure that less

utilized units perform prevention activities such as pre-fire plans and simple fire

inspections, training, and public education activities.

Recommendation: The Department should ensure that underutilized units perform prevention activities (e.g. pre-fire plans, simple fire inspections), training, and public education activities. In addition, the Department should consider rotating personnel amongst busy and less busy stations to ensure personnel all personnel have the opportunity to meet recommended daily training targets of two hours.

4.   **WHILE THE DEPARTMENT HAS SUFFICIENT STAFF TO MEET DAILY STAFFING REQUIREMENTS, THERE ARE OPPORTUNITIES TO IMPROVE MANAGEMENT OF DAILY SHIFT STAFFING.**

Matrix Consulting Group evaluated current minimum daily staffing requirements

and the Department's ability to meet these needs based on current authorized staffing.

Several factors were considered in performing this analysis including:

•   Daily units staffing needs. For example, the Department typically staffs a rescue unit with two paramedics each day, while engine companies are staffed with a Fire Lieutenant, Drive, and Firefighter.

•   Shift factor. This element provides for continuous twenty-four hour unit staff. The project team utilized a shift factor of 0.142 (48 hours on average worked each week / 168 hours of coverage needed for each unit.

•   Use of leave. Use of leave is the amount of time used by operations personnel for sick, vacation, military, disability, and other types of leave. Total available hours are reduced by average leave utilization.

•   Turnover. A turnover factor of 5% was applied to total staffing needs to ensure continuous coverage of positions as personnel leave and new recruits are trained.

The project team utilized the factors above to develop total operations staffing

needs (note this does not include Battalion Chiefs, Deputy Chiefs, or EMS Captains –

these positions are evaluated in the Organization chapter).

Unit	Officer	Driver	Firefighter	Paramedic	Total	With Shift Factor	Min. Needed with Leave & Turnover
Battalion 2							
Engine 2	1	1	1		3	11	14
Ladder 2	1	1	1		3	11	14
Rescue 2				2	2	7	9
Engine 8	1	1	1		3	11	14
Rescue 8				2	2	7	9
Engine 3	1	1	1		3	11	14
Rescue 3				2	2	7	9
Engine 46	1	1	1		3	11	14
Rescue 46				2	2	7	9
Rescue 246				2	2	7	9
Engine 47	1	1	1		3	11	14
Rescue 47				2	2	7	9
Rescue 247				2	2	7	9
Total Batt. 2	**6**	**6**	**6**	**14**	**32**	**112**	**146**
Battalion 13							
Engine 13	1	1	1		3	11	14
Ladder 13	1	1	1		3	11	14
Rescue 13				2	2	7	9
Engine 29	1	1	1		3	11	14
Engine 49	1	1	1		3	11	14
Rescue 49				2	2	7	9
Fireboat 49*					0	-	-
Engine 54	1	1	1		3	11	14
Rescue 54				2	2	7	9
Total Batt. 13	**5**	**5**	**5**	**6**	**21**	**74**	**96**
Battalion 35							
Engine 16	1	1	1		3	11	13
Rescue 16				2	2	7	9
Engine 35	1	1	1		3	11	13
Ladder 35	1	1	1		3	11	13
Rescue 35				2	2	7	9
Truck 53	1	1			2	7	9
Rescue 53				2	2	7	9
Engine 88	1	1	2		4	14	17
Support 88			1		1	4	4
Total Batt. 35	**5**	**5**	**6**	**6**	**22**	**77**	**94**
Grand Total	**73**	**73**	**77**	**118**	**75**	**263**	**336**

As shown above, the Operations Division of Fort Lauderdale Fire-Rescue needs

a total of 336 personnel to maintain minimum unit staffing twenty-four hours each day.

This figure consists of 73 Fire Lieutenants, 73 Fire Engineer/Drivers, and 195 Firefighter/Paramedics. The table, below, shows the current **authorized** department staffing (authorized staffing figures are used since the Department is currently hiring additional personnel due to vacancies):

Position	Current Authorization	Needed	Variance
Fire Lieutenant	71	73	(2)
Driver / Engineer	72	73	(1)
Firefighter/Paramedic	191	195	(4)
Total	334	341	(7)

As shown above, the Operations Division is short approximately seven positions based on its current authorization. Note that this deficit is largely attributable to the additional personnel required to account for staff turnover. Turnover is likely to vary from year to year. The project team next evaluated whether it is more cost effective to hire additional personnel or utilize overtime to cover the shortage. The table, below, shows the estimated cost of hiring additional personnel compared to using overtime:

Position	Mid-Point Salary	Benefits (@52.3%)	Position Cost	#	Total Cost
Fire Lieutenant	64,296.00	33,601.09	97,897.09	2	195,794.18
Driver / Engineer	54,537.00	28,501.04	83,038.04	1	83,038.04
Firefighter/Paramedic	49,171.00	25,696.76	74,867.76	4	299,471.06

Position	Mid-Point Salary	Overtime Premium	Overtime Cost	#	Total Cost
Fire Lieutenant	64,296.00	32,148.00	96,444.00	2	192,888.00
Driver / Engineer	54,537.00	27,268.50	81,805.50	1	81,805.50
Firefighter/Paramedic	49,171.00	24,585.50	73,756.50	4	295,026.00

Additional Position Cost	**$ 578,303.27**
Overtime Cost	**$ 569,719.50**
Difference	**$ 8,583.77**

As shown above, by using overtime to fill vacancies due to turnover, the Department saves approximately $8,500 each year. This approach also provides opportunities for staff to work out of class as drivers and lieutenants.

The project team also evaluated how daily staffing needs are managed by the Department. This evaluation includes considering how and when overtime is used, technologies utilized to minimize time spent on these tasks and overtime costs associated with scheduling, and the overall effectiveness of daily shift staffing. The first step in this analysis was to evaluate current and past overtime expenditures. In the project team's experience, agencies that effective management staffing needs and overtime expenditures spend between 5% to 7% of regular salaries and wages on overtime. The table below shows expenditures for the past two years and estimated outlays for the most recent fiscal year:

Element	03/04 Actual	04/05 Actual	05/06 Estimated
Salaries & Wages	22,493,408	24,063,549	24,246,439
Overtime	964,569	1,829,595	2,566,112
Percent (%)	4%	8%	11%

As shown above, the level of overtime expenditures has increased significantly over the past three fiscal years. Expenditures during 2003-04 were well within the benchmark 5% to 7%. Expenditures during 2004-05 were just above this benchmark. The current fiscal year, clearly, is outside the target. It should be noted however, that the Department held and will conduct a total of three academies during 2006, with a total of 46 personnel. The increase in overtime expenditures is clearly due to vacancies within the Department. Moreover, as shown previously, the practice of utilizing overtime is marginally more cost effective than hiring additional personnel.

The project team also evaluated the methods used to manage day-to-day staffing requirements within operations. The following points describe the current process utilized by the Department to manage daily shift staffing:

- Vacation and Kelly days are bid in advance based on seniority and minimum positions/qualifications needed for each unit/shift. The Department has established rules to minimize overtime needs. Examples of the rules include:

  - Lieutenant and Driver/Engineer's assigned to the same apparatus cannot have the same Kelly Day.

  - The three primary Technical Rescue Team (TRT) Lieutenants cannot have the same Kelly Day. The four primary TRT Driver / Engineers cannot have the same Kelly Day. The seven primary TRT Firefighters cannot have the same Kelly Day.

  - The three primary Haz Mat Lieutenants cannot have the same Kelly Day. The four primary Haz Mat Driver/Engineers cannot have the same Kelly Day. The seven primary Haz Mat Firefighter cannot have the same Kelly Day.

- Sick calls are accepted until 7:15 a.m. on the day personnel are scheduled to work. Shift change begins at 8:00. This is specific in the contract.

- An overtime list is developed based on seniority and the number of overtime hours worked and refused. Personnel with the fewest number of overtime hours worked are offered overtime first.

- Staff qualifications (Haz-Mat, Paramedic, TRT) and assignments are tracked in Telestaff. This information is utilized by Lieutenants assigned to Station 2 make overtime phone calls each morning and provide the on-duty Division Chief with a list of available personnel. Typically, Lieutenants from the out-going shift are paid overtime to perform scheduling duties.

- The Division Chief finalizes the schedule and updates the daily roster in Telestaff.

Based on the project team's observations, the Department is not effectively utilizing Telestaff to manage overtime hiring and scheduling. Telestaff should be utilized to automatically call qualified personnel and update the system with accepted assignments or refusals. Overtime Fire Lieutenants should not be used to schedule overtime and manage daily shift scheduling. Similar (or larger) sized agencies, such as the Sacramento Fire Department, have one civilian assigned each day to assist the

Operations Commander with scheduling issues. This is accomplished because the automation features available in Telestaff are utilized effectively.

Recommendation: The Department is appropriately staffed given current minimum staffing requirements. The Department should continue to utilize overtime to fill vacancies due to turnover. This practice saves approximately $8,500 annually in direct costs.

Recommendation: FLFR should implement the automated calling feature of Telestaff to change the current overtime hiring and shift staffing practice. Using these features will allow the Department to discontinue the practice of using overtime Fire Lieutenants to schedule overtime and manage shift staffing.

5.   **ANALYSIS OF AMBULANCE REQUIREMENTS SHOWS THAT WHILE THE DEPARTMENT HAS AN APPROPRIATE NUMBER OF UNITS, EMS DEMAND IN SOME DISTRICTS IS GREATER THAN UNIT AVAILABILITY.**

The project team evaluated the demand for emergency medical transport services within the City of Fort Lauderdale and the Department's contract areas. Several measures were utilized to evaluate ambulance unit needs including. The first subsection, that follows, discusses the variance in ambulance utilization.

(1)   **Ambulance Availability Indicates That While the Majority of Ambulance Units Are Committed on a Regular Basis, the Department Rarely Exceeds Total Available Capacity.**

The project team analyzed how frequently multiple ambulance units were committed (i.e. handling calls for service) at the same time. This analysis was performed to identify potential ambulance availability issues. The project team utilized a sample of calls during the first eight months of 2006, January 1, 2006 to August 31, 2006 to document the occurrence of multiple ambulance units committed at one time. The table below shows the results of this analysis:

Fort Lauderdale Fire-Rescue
Number Ambulance Units Committed
at the Same Time, 1/1/06 to 8/31/06

# of Ambulance Units	Number	%	Avg./Day
2 Units	18,215	80%	74.65
3 Units	18,160	80%	74.43
4 Units	9,723	43%	39.85
5 Units	4,993	22%	20.46
6 Units	2,361	10%	9.68
7 Units	990	4%	4.06
8 Units	382	2%	1.57
9 Units	135	1%	0.55
10 Units	48	0%	0.20
11 Units	14	0%	0.06
12 Units	6	0%	0.02
13 Units	3	0%	0.01
Total Calls	22,765	100%	93.30

The following summarize the table above:

• Approximately 22,765 calls were utilized to evaluate the how often multiple ambulance units were committed during 2006.

• Approximately 75 times each day, three units were committed at the same time. Approximately 80% of calls responded to by ambulance units occurred when three ambulance units committed at the same time.

• There were approximately 40 instances each day where four units were committed at the same time.

• Approximately 10 times each day six units were committed at the same time.

• There were three instances where all 13 units were busy due to handling calls for service.

As shown above, while approximately half of all ambulance units were frequently busy at the same time, there were few instances during the eight-month period where ten units or more were committed at once. Note that the above analysis does not consider units out of service due to maintenance, training, or other reasons. However, instances where all thirteen ambulance units were busy handling calls at the same time were extremely rare. The next section discusses ambulance workload and unit demand.

(2)   Ambulance Unit Demand Analysis

Matrix Consulting Group utilized an ambulance demand model to calculate the number of ambulance units needed within the City of Fort Lauderdale. This analysis incorporates a number of assumptions and data elements including the following:

•   Average EMS calls demand by hour in each of the districts within the service area.

•   Average time needed to handle an EMS call by ambulance units. The project team utilized an average handling time of one hour for each call for service. This figure is based on an average call handling time of 42 minutes during 2003 to 2006 for all rescue units plus an additional 15 to 20 minutes for decontamination, clean-up, and re-supply of medical equipment and supplies.

•   Average unit availability: The ambulance need calculation utilizes an availability rate of 50%. This accounts for the variability in ambulance unit availability during a given hour.

•   Variance in hourly ambulance workload: The project team applied two standard deviations of hourly call demand to the average time needed to handle workload within a given hour. Applying this figure ensures that 95% of the variations in EMS workload can be handled.

These data and assumptions were utilized to evaluate ambulance workload demand in each of the response districts within the service area. The first exhibit, below, shows hourly EMS demand during September 1, 2005 to August 31, 2006 (note that calls that did not contain a district identifier are not shown below but are included in the total):

Fort Lauderdale Fire-Rescue
EMS Calls for Service, 9/05 to 9/06

Hour	13	16	2 / 8	29	3	35	46	47	49	53	54	88	Total
0	28	43	193	51	71	50	152	71	47		47	21	788
1	26	41	162	38	63	41	138	56	22	2	29	18	644
2	19	34	181	49	46	47	131	48	35	2	32	18	651
3	17	29	133	40	40	30	118	48	22	3	28	18	540
4	18	27	142	34	39	38	127	41	21	2	26	16	547
5	7	34	117	42	44	40	89	41	18	1	26	15	483
6	13	35	139	43	50	54	132	60	19	1	21	23	610

Hour	13	16	2 / 8	29	3	35	46	47	49	53	54	88	Total
7	28	58	202	56	65	66	163	72	31		33	41	833
8	39	67	269	86	129	116	224	109	35	5	68	71	1,249
9	31	88	308	99	118	126	224	122	54	8	71	76	1,355
10	36	76	326	106	123	135	236	101	65	6	72	83	1,401
11	57	99	341	116	157	157	272	128	39	6	79	79	1,562
12	38	74	325	105	134	132	238	101	48	8	71	73	1,375
13	49	62	359	115	138	130	272	131	42	4	72	61	1,467
14	57	69	309	107	135	116	272	116	44	6	62	78	1,408
15	43	72	332	106	110	106	235	125	42	1	76	78	1,355
16	41	54	317	99	126	126	253	124	58	4	60	71	1,375
17	50	73	305	108	133	113	265	124	49	1	73	65	1,401
18	38	76	284	105	95	106	247	137	47	10	59	59	1,297
19	36	76	275	90	102	83	286	132	46	2	55	36	1,256
20	30	63	269	91	98	100	257	119	44	4	61	41	1,204
21	34	60	298	68	84	88	272	113	47	2	61	42	1,187
22	40	54	225	69	88	63	221	91	39	3	38	21	972
23	30	53	204	59	57	58	174	73	42		45	14	828
Total	805	1,417	6,015	1,882	2,245	2,121	4,998	2,283	956	81	1,265	1,118	25,788

As shown, above, the largest share of emergency medical workload occurred in Station 2 / 8's district (23%), followed by Station 46's district at 19%. The average daily number of EMS calls for service handled by the department was approximately 71 each day during this period. Based on these figures, and the assumptions described above, Matrix Consulting Group determined the number of ambulance units needed in each district and Citywide. The exhibit, below, shows the number of units needed by hour:

Fort Lauderdale Fire-Rescue
Ambulance Unit Demand Calculation Based on 9/05 to 9/06 Data

Hour	13	16	2	29	3	35	46	47	49	53	54	88	NA	Total
0	0.30	0.45	1.89	0.59	0.79	0.69	1.50	0.75	0.39	0.03	0.47	0.40	0.19	8.21
1	0.28	0.44	1.72	0.52	0.75	0.64	1.43	0.67	0.26	0.04	0.37	0.38	0.16	7.42
2	0.25	0.40	1.83	0.58	0.66	0.67	1.39	0.62	0.33	0.04	0.38	0.38	0.17	7.46
3	0.24	0.37	1.56	0.53	0.62	0.58	1.32	0.62	0.26	0.05	0.36	0.38	0.19	6.85
4	0.24	0.36	1.61	0.50	0.62	0.62	1.37	0.59	0.25	0.04	0.35	0.37	0.20	6.89
5	0.18	0.40	1.48	0.54	0.64	0.64	1.16	0.59	0.24	0.04	0.35	0.36	0.17	6.54
6	0.21	0.40	1.60	0.55	0.68	0.71	1.40	0.69	0.24	0.04	0.32	0.41	0.23	7.24
7	0.30	0.53	1.94	0.62	0.76	0.78	1.57	0.76	0.31	0.03	0.39	0.51	0.21	8.46
8	0.36	0.58	2.31	0.79	1.11	1.05	1.90	0.96	0.33	0.06	0.58	0.67	0.29	10.74
9	0.31	0.69	2.52	0.86	1.05	1.11	1.90	1.03	0.43	0.07	0.60	0.70	0.28	11.32
10	0.34	0.63	2.62	0.90	1.08	1.16	1.97	0.92	0.49	0.06	0.60	0.74	0.31	11.57

Hour	13	16	2	29	3	35	46	47	49	53	54	88	NA	Total
11	0.45	0.75	2.70	0.95	1.26	1.28	2.16	1.06	0.35	0.06	0.64	0.72	0.29	12.45
12	0.35	0.62	2.62	0.89	1.14	1.14	1.98	0.92	0.40	0.07	0.60	0.68	0.27	11.43
13	0.41	0.55	2.80	0.94	1.16	1.13	2.16	1.08	0.37	0.05	0.60	0.62	0.29	11.93
14	0.45	0.59	2.53	0.90	1.14	1.05	2.16	1.00	0.38	0.06	0.55	0.71	0.32	11.61
15	0.38	0.61	2.65	0.90	1.01	1.00	1.96	1.05	0.37	0.04	0.63	0.71	0.27	11.32
16	0.37	0.51	2.57	0.86	1.09	1.11	2.06	1.04	0.45	0.05	0.54	0.67	0.35	11.43
17	0.42	0.61	2.51	0.91	1.13	1.04	2.12	1.04	0.41	0.04	0.61	0.64	0.35	11.57
18	0.35	0.63	2.39	0.89	0.92	1.00	2.03	1.11	0.39	0.09	0.53	0.61	0.30	11.00
19	0.34	0.63	2.34	0.81	0.96	0.87	2.24	1.08	0.39	0.04	0.51	0.48	0.32	10.78
20	0.31	0.56	2.31	0.81	0.94	0.96	2.08	1.01	0.38	0.05	0.54	0.51	0.26	10.49
21	0.33	0.54	2.47	0.69	0.86	0.90	2.16	0.98	0.39	0.04	0.54	0.51	0.21	10.40
22	0.36	0.51	2.07	0.69	0.89	0.76	1.88	0.86	0.35	0.05	0.42	0.40	0.23	9.22
23	0.31	0.50	1.95	0.64	0.72	0.73	1.63	0.76	0.37	0.03	0.46	0.36	0.22	8.43
Max	**0.45**	**0.75**	**2.80**	**0.95**	**1.26**	**1.28**	**2.24**	**1.11**	**0.49**	**0.09**	**0.64**	**0.74**	**0.35**	**12.45**

The following points summarize the information in the above table:

- Based on EMS workload, unit availability, and variance in call demand, the City requires approximately thirteen ambulance units. The Department currently deploys thirteen units.

- Unit demand is highest in Station 2's district where more than two units are required during several hours of the day. Station 2 has two rescue units. The unit demand calculations shows that three units are needed to handle workload in this area.

- Unit demands exceeds available resources (i.e. assigned ambulance units) in Station 2's district, Station 46's district, Station 3's district, and Station 35's district.

- Unit demand is highest in these areas between the hours of 0800 and 1800.

While the Department overall has the correct number of ambulance units, there are areas of the City – Station 2, Station 46, Station 3 and Station 35's district, where call demand exceeds available units. As a result, a unit from another district is used to handle calls for service during busy hours. This may explain the increase in response times shown in the previous section (concurrent calls). The next section provides information on the impact of out of district responses.

(3)   Out of District Responses Impact Ambulance Response Times

The table, below, shows average drive times during those incidents where a unit

from outside the district responded to an EMS call:

St. Sent	First Due Station												
	2	**3**	**13**	**16**	**29**	**35**	**46**	**47**	**49**	**53**	**54**	**88**	**Total**
2	3.36	5.50	8.36	7.10	6.47	4.39	4.66	6.90	7.80		6.28	12.33	**3.74**
3	5.28	3.26	5.44		6.03		6.28	7.74	7.65				**3.53**
13	5.92	3.00	2.99	6.92	4.27	6.53	6.74	5.95	5.25		5.14	5.45	**4.13**
16	4.97	4.43	6.68	3.10	4.16	6.98	4.90	12.63	10.29	8.18	5.96	8.67	**4.06**
29			0.03		6.04		6.43						**3.52**
35	3.10	0.18	6.77	7.41	5.80	3.00	8.12			8.96	5.76	6.41	**3.53**
46	3.87	4.80	6.28	5.14	5.52	6.23	3.68	8.14	10.72	6.22	8.03	8.09	**3.90**
47	5.14	5.58	2.22	5.85	7.08	5.09	6.07	3.79	8.23	10.47		4.57	**4.25**
49	5.39	4.45	4.62	5.25	8.87	5.79	6.85	14.58	3.04		8.47		**3.66**
53	12.27	13.69	23.77	8.05	9.96	8.74	8.36	9.93	20.24	3.31	11.32	4.46	**4.93**
54	8.76	5.89	5.60	5.65	4.47	7.13	6.05	11.58	8.32		3.04	11.76	**4.16**
Total	**3.66**	**3.81**	**3.57**	**3.84**	**4.61**	**3.85**	**4.02**	**4.04**	**3.66**	**3.99**	**3.65**	**4.98**	**3.93**

The following points summarize the table above:

• The table, above, shows that the average drive time for units responding out of district is significantly higher than the first due unit. For example, responses from Station 3 to Station 2's first due area require an average drive time that is 57% higher than if a unit from Station 2 was sent.

• Note that the Station which typically responds into Station 2's area when no unit is available from Station 2, Station 46, results in a 15% (approximately 30 seconds) higher average response time.

• In addition, a response from Station 2 into Station 46's area, results in a response time that is 27% (approximately 1 minute) longer than if a unit from Station 46 was available.

The impact of out of district responses on response time compounds as

additional out of district units are sent to cover units outside of their districts. The table,

below, shows how often a unit from outside of the response district responds into the

each station's first due area:

Out of District Ambulance Responses
First Ambulance Unit Responding by First Due Area
And Responding Station, 9/05 to 9/06

St. Sent	First Due Station												
	2	3	13	16	29	35	46	47	49	53	54	88	Total
2		131		8	30	1	345	34	13		1		563
3	59		1		1		1	7	5				74
13	31	9		12	260	10	6	2	42		49	1	422
16	29	4	2		308	18	220		1		5	7	594
29			3				1						4
35	2		1	2	14		1			3	40	49	112
46	440	15	3	74	104	5		7				4	652
47	270	86	1	1		2	112		1			5	478
49	26	151	34		3	2					1		217
53				3	2	14	7	1				647	674
54	2	3	18	14	156	52	2		3			3	253
Total	859	399	63	114	878	104	695	51	65	3	96	716	4,043

As shown, above, there were a total of 4,043 first ambulance unit responses from units outside of the district, for an average of 11 each day. The majority of responses, 859 (21%) occurred in Station 2's first due area, following by Station 29's first due area at 695 or 17%. Note that the districts located near the central area of the City, Station 2, Station 29, and Station 46, comprised approximately 60% of out-of-district responses.

As shown in the above, and in the previous sections, the districts within the central area of the City are not able to meet the EMS demands. As a result, units from other districts must respond to handle the workload, causing extended response times. Based on call for service workload, response times, and ambulance availability, the project team recommends that an additional day time unit be utilized to handle EMS calls for service within the central area of Fort Lauderdale. Based on workload patterns, this unit should be utilized during the hours of 0800 and 1800. The estimated costs associated with staffing this unit are shown below:

Estimated Staff Costs Associated With Adding A Day Time Ambulance Unit

Position	Mid-Point Salary	Assignment Pay	Overtime	Total
Crew Chief	49,171.00	4,917.10	27,044.05	81,132.15
Firefighter/Paramedic	49,171.00	3,441.97	26,306.49	78,919.46

Hours of Coverage	3,650
Unit Overtime Cost per Hour*	$64
Total Overtime Cost	$234,050

*Includes two staff members

As shown above, if overtime is used to staff this 10-hour unit the estimated cost will be $234,050 each year. This approach is more cost effective than hiring additional personnel given the current work schedule and daily need for this unit (10 hours). If full time positions were used, the cost would exceed $650,000. This unit should float between the downtown areas, Station 2, Station 46, and Station 29's area to absorb additional workload. This unit could also be housed at Station 2 if EMS 29 is relocated to Station 3.

Recommendation: Given EMS workload demands and unit availability, the City should authorize an additional $234,050 in overtime to staff a 10-hour ambulance unit. This unit will float between the busiest areas of the City. This approach will minimize staffing costs and reduce response times. Existing ambulances ("detail rigs") could be used to provide coverage for this 10-hour period – a new apparatus will not be immediately required to implement this recommendation.

6. ANALYSIS OF THREE PERSON RESCUE UNITS.

The project team evaluated the need for an additional person on each of the rescue units. This approach has been proposed by the bargaining unit and by members of the command staff in the Fire-Rescue Department. Southeast Florida is unique in that ambulance service is typically provided by units staffed with three personnel. The project team conducted a comparative survey to document staffing practices amongst similarly sized Fire-Rescue agencies within Florida and throughout the United States.

The table, below, shows how fire, rescue, and emergency medical units are staffed in

other agencies (the detailed results are provided in an appendix to this report):

Minimum Engine and Rescue Ambulance Staffing

Engines / Rescues	2-Person Rescue Ambulances	3-Person Rescue Ambulances
2-Person Engines		Margate/Coconut Creek, FL Hallandale, FL
3-person Engines	Columbus, GA* Coral Springs, FL Des Moines, IO Newport News, VA North Lauderdale, FL Shreveport, LA*** Tacoma, WA	Columbus, GA* Davie, FL (No aerial) Hialeah, FL Hollywood, FL Miramar, FL Pembroke Pines, FL Sunrise, FL**** Tamarac, FL*****
4-person Engines	Mobile, AL Montgomery, AL**	Miami Beach, FL Miami, FL Miami-Dade, FL
Volunteers		Plantation, FL

*Columbus, GA - Rescue ambulances are staffed by a mix of 2- and 3-person crews.
**Montgomery, AL – Deploys rescue ambulances but transport is done by private companies.
***Shreveport, LA – Ladders are staffed with 2 person crews.
••••Sunrise FL – Current rescue ambulance staffing is 2 person crews but will increase to 3 in next budget. Deploy one 2-person ladder.
*****Tamarac, FL – Has a ladder but it is not always staffed.

As shown above, most of the Southeast Florida agencies surveyed, with the

exception of North Lauderdale and Coral Springs, utilize three person ambulance units

to provide EMS service. Also note that most agencies that utilize three person

ambulance units also staff engine units with three personnel, with the exception of the

Miami metro agencies, and the two which staff with two-person engines.

The rationale behind using three person ambulance units is that many EMS

incidents require the assistance of a third person to assist the primary paramedic

delivery treatment to a patient while one person is driving the ambulance to the hospital.

This is also one of the reasons why an engine unit is also sent to EMS incidents. Not

only is the engine sent to provide a quick response and provide basic life support within

the critical six to seven minutes of cardiac arrest, but the unit is also there to provide

assistance to the paramedics assigned to the ambulance unit. Examples of assistance may include: lifting a large patient onto a gurney, assisting with C-spine immobilization, assisting with intubating a patient, delivering chest compressions, and the intravenous administration of medicines. Agencies that utilize this approach to delivering EMS service also claim that having three person ambulance units allows the Department to preserve the resources of an engine company.

In order to evaluate the need for three person rescue units, the project team considered the following elements:

- The effectiveness of the current dispatch protocol for EMS incidents utilized by the Department. The current approach calls for dispatch of two units to almost all EMS incidents within FLFR's response area. Emergency Medical Dispatch (EMD), a protocol used to categorize EMS calls by severity and modify dispatch protocols accordingly, is not currently utilized in the Departments dispatch center.

- The number of EMS incidents requiring the assistance of a third person. The project team compiled data on the number of BLS, ALS1, and ALS2 calls received by the Department during 2005. The following points define each of these service types (definitions were taken from Medicare Carriers Manual, Sections 2120.1-2124.H, 2125, 3102, 5116, 5215 and the American Medical Association):

    - The BLS assessment is defined as an evaluation of the patient in the following capacity:

        -- Visual overview.

        -- Primary assessment that includes temperature, pulse, respirations, blood pressure, and pulse oximetry reading.

        -- Secondary assessment which is a focused head to toe assessment and includes the following components: mental status assessment to include eye contact, violence, posture, general appearance, and behavior to identify harm to self and others; a full body survey, chief complaint, onset and duration; the history of present illness, past medical history, and type of breath sounds.

    - A BLS intervention is a technique that can be performed by an EMT for a number of conditions. The following interventions are considered BLS

techniques/skills:

-- Opening airway and foreign body removal (finger sweep).

-- Upper airway suctioning.

-- Oropharyngeal/nasopharyngeal airway insertion.

-- Artificial ventilation with a bag-valve mask.

-- Cardiopulmonary resuscitation (CPR).

-- Automated External Defibrillator.

-- Physical restraints.

-- Crisis intervention.

-- Simple immobilization of specific extremity (e.g., boards, bandages, slings, commercial splints without traction, air splints).

-- Complex immobilization of specific extremity (e.g., use of traction splints, straightening fracture and reducing selected dislocations).

-- Assessment of oxygen saturation via pulse oximetry.

-- Oxygen therapy via nasal cannula or venti-mask.

-- Establishment of intravenous access only when additional training has been received.

-- Observation and documentation of self-administration by the patient of any prescribed medication or treatment modality.

- ALS assessment is defined as an evaluation of the patient by a paramedic or higher trained clinician (nurse, respiratory therapy, physician, etc.) to include the following:

-- Visual overview and vital signs as defined in the BLS assessment.

-- Primary assessment, which may include temperature, pulse, respirations, blood pressure, pulse oximetry reading, electrocardiogram interpretation and capnometry.

-- Secondary assessment as defined in the BLS assessment in addition to a comprehensive assessment that includes review of

systems and heart sounds.

- An ALS intervention is a technique that is performed by a paramedic or higher trained clinician for a number of conditions. The paramedic can perform all BLS interventions in addition to ALS interventions. The following interventions are considered ALS techniques/skills:

    -- Foreign body removal utilizing instrumentation.

    -- Oral/Tracheal intubation with or without pharmacological assistance, including confirmation of placement, securing of tube, monitoring of SpO2 with pulse oximetry and end-tidal CO2 detector monitor.

    -- Ventilatory assistance management via manual means or mechanical ventilator, Combitube, laryngeal mask airway, nasotracheal or endotracheal tube or CPAP.

    -- Surgical airway (cricothyrotomy).

    -- Chest decompression.

    -- Peripheral Venous Access/Venipuncture/glucose assessment.

    -- Intraosseous infusion.

    -- Medication administration when given via subcutaneous, intramuscular, intravenous, transcutaneous, central, rectal, oral/sublingual, nasal, inhaled, or endotracheal.

    -- Comprehensive ingestion/exposure management.

- Medicare reimburses at different rates for BLS and ALS care based on the provision of BLS or ALS interventions defined above. In addition, ALS 2 is a higher level of reimbursement and is further defined as "when medically necessary, the administration of at least three different medications and/or the provision of manual defibrillation/cardioversion, endotracheal intubation, central venous line cardiac pacing, chest decompression, surgical airway and/or intraosseous line."

• Based on the type of care provided, as defined above, the project team utilized the number of ALS 2 calls as a measure of those instances where a third person was needed. ALS 2 calls were used because of the higher level of treatment provided to patients. While there may be times when additional personnel would be useful to assist with patients, the severity of the call should be the criterion used to evaluate workload demands.

The table, below, provides statistics on the number of transport units, BLS calls, ALS calls, and ALS 2 calls handled by the Department during 2005 and estimated for 2006:

Element	Number	Average/Day
Transports - 2005	20,971	57.5
Transports – 2006 (estimated)	21,600	59
BLS Transports - 2005	8,807	24.1
ALS Transports - 2005	11,744	32.2
ALS 2 Transports - 2005	419	1.1
Estimated ALS 2 Transports - 2006	432	1.2

The following points highlight the information above:

• As shown above, ALS 2 transports represent approximately one call each day. This is a very low level of workload to justify an additional person assigned to an ambulance unit.

• Assuming that 10% of call transports required the assistance of a third person on the ambulance unit, this would represent approximately 6 calls each day. Given the already low utilization levels for more than half of the ambulance units, this is it would not be an efficient use of resources to assign a third person to each Rescue (ambulance) unit.

Overall, the project team does not find that a third person assigned to the ambulance unit would be an efficient use of high trained, expensive, personnel. In addition, the project team believes that the Department can more effectively screen its calls for service by using EMD to limit the number of units sent to minor EMS calls. From, September 1, 2003 to August 31, 2006, the Department dispatched 77,685 EMS calls. Of these calls, over 75% of the time, more than one unit was sent. Given the low incidence of major EMS incidents (i.e. cardiac arrest, stroke, gunshot wound, etc.) this is a very high percentage of call to dispatch more than one unit. While EMD would have to be performed by Broward County Sheriff's Office, who provides initial call taking services for Fort Lauderdale Fire-Rescue, effectively screening EMS calls will preserve

Fire Department resources by properly classifying the severity of calls (e.g. life

threatening vs. non-life threatening). Preserving first response units, engine companies,

will also provide more effective response to other calls for service and will improve

response times.   It should be recalled that the typical justification for assigning a

paramedic to each Engine company is to ensure a high level of EMS service delivered

from each initially arriving unit.

Recommendation: Based on workload, the Department should not add a third position on each of the ambulance units.

Recommendation: The Department should implement EMD (emergency medical dispatch) to more effectively screen EMS calls and preserve Department responses. This measure will also improve initial response times as engine companies are freed up to provide a quick response. The cost of adding EMD to the center, in terms of software and training, is estimated to be $40,000 plus annual maintenance of $5,000.

4. ANALYSIS OF THE STAFFING OF THE ADMINISTRATION DIVISION

This chapter presents the project team's analysis of staffing and operations of the Administration Division, which includes the following units: Fire Prevention, Training, Emergency Medical Services, Communications, Support Services, and Ocean Rescue. The first section, below, discusses staffing and operations of the Prevention unit.

1. **ANALYSIS OF STAFF UTILIZATION AND WORKLOAD INDICATES THAT THE PREVENTION UNIT IS APPROPRIATELY STAFFED AND PERSONNEL ARE EFFECTIVELY UTILIZED.**

The Fire Prevention Bureau is staffed by 18 sworn personnel and three support / clerical staff. The Fire Prevention Bureau is responsible for enforcing the Florida Fire Prevention Code, the Florida Building Code, applicable provisions of the National Fire Protection Association Life Safety Code, and City Code of Ordinances. The following points summarize the organization and operations of the units within Fire Prevention:

• **Plans Review**: One Captain, one Lieutenant and 1 Fire Inspector II are assigned to the plans review unit. This unit is responsible for reviewing site and building plans for compliance with the locally adopted fire code. The Fire Inspector II also conducts final certification of occupancy inspections.

• **Territory Inspections:** One Lieutenant and nine inspectors are assigned to Territory Inspections. This unit is responsible for conducting annual business inspections, multi-family dwelling inspections, and all non high-rise and non-licensed facility inspections. Inspectors are assigned to one of nine geographic inspection districts.

• **High Rise Inspections:** One Lieutenant is assigned to High Rise Inspections. In addition a Lieutenant assigned to Sprinkler System Inspections assists with inspection of High Rise Suppression Systems.

• **Sprinkler System Inspections:** One Lieutenant is assigned to Sprinkler System Inspections. This unit is responsible for inspection of automatic suppression systems for all building within the City.

- **Public Schools/ALF Facilities Inspections:** One Lieutenant is assigned to conduct inspections of schools, assisted living facilities, and other state mandated inspections.

- **Fire Investigations:** Investigations is an additional responsibility of inspectors assigned to the Fire Prevention Bureau. Investigation call out is rotated each week with one inspector assigned.

As a starting point, the project team compared current authorized staffing levels within the FLFR Prevention Bureau to levels in similarly sized agencies within Florida and the United States. The table, below, compares total sworn personnel to the number of personnel assigned to prevention units:

Comparative Survey Results
Prevention Unit Staffing

Department	Total Personnel	Sworn Prevention Personnel	Civilian Prevention Personnel	Percent
Columbus	378	10	0	3%
Coral Springs/Parkland	172	10	0	6%
Davie	175	4	0	2%
Des Moines	280	9	0	3%
Fort Lauderdale	**452**	**18**	**0**	**5%**
Hallandale	85	2	0	2%
Hialeah	334	8	0	3%
Hollywood	273	6	0	3%
Margate/Coconut Creek	109	2	0	2%
Miami	700	47	0	7%
Miami Beach	225	NA	7	
Miami-Dade	2,200	53	105	3%
Miramar	160	6	0	4%
Mobile	460	14	0	3%
Montgomery	459	NA	NA	
Newport News	436	6	3	2%
North Lauderdale	46	6	0	13%
Pembroke Pines	266	NA	NA	
Plantation	65	3	0	
Shreveport, LA	603	9	0	2%
Sunrise	161	8	0	6%
Tacoma	406	13	0	3%
Tamarac	108	3	0	3%
Average				**4%**

As shown above, the average number of personnel assigned to prevention duties within the survey group (excluding Fort Lauderdale) is approximately 4% of total

personnel. Fort Lauderdale is slightly above this average at 5% of total personnel. Also

note that prevention staffing varied significantly from 2% in Davie and Margate to 13%

in North Lauderdale.

The project team collected workload data to evaluate the productivity of

personnel assigned to the Fire Prevention Bureau and to identify opportunities for

improvement. The table, below, shows inspection activity during

Fire Prevention Workload, FY 2005-2006 (Up to 8/06)

Activity	YTD Inspect.	Re-Insp.	Total	Estimated Annual
High Rise*	275.00	316.00	591.00	709.20
Sprinkler*	763.00	472.00	1,235.00	1,482.00
Fire Inspections	11,724.00	4,928.00	16,652.00	18,165.82
Plan Review**			7,698.00	7,698.00

*Figures for High Rise and Sprinkler inspections are up to 7/31/06 of the fiscal year.
**Plan Review figures are for 2005.

As shown, above, the Prevention Bureau is estimated to perform 709 high-rise

inspections, 1,482 sprinkler system inspections, and 18,165 fire inspections during the

past fiscal year. The Bureau conducted 7,698 plan reviews during 2005.

Based on the figures, above, the project team estimated the total annual

workload generated by inspection and plan review activities for fiscal year 2005-06. In

developing these estimates, the project team made the following assumptions:

• High-rise inspections were estimated to take an average of two hours for the initial inspection and one hour for re-inspections. Note these figures include travel time between inspections.

• Sprinkler system inspections were estimated to take an average of one hour for the initial inspection and forty-five minutes for subsequent re-inspections. Again these figures include travel time between sites.

• Fire inspections were estimated to take an average of one hour for the initial inspection and thirty-minutes for re-inspections. Travel time is included.

• Plan reviews are estimated to take an average of thirty minutes to complete.

The project team next estimated available time for personnel assigned to the Prevention Bureau. Here Matrix Consulting Group utilized the following assumptions:

• Personnel were available approximately 82% of scheduled hours. This figure was developed based on actual 2005 use of leave figures.

• The Inspector assigned to plan review was assumed to spend approximately 75% of his time to final certificate of occupancy inspections and 25% performing plan review.

• The Lieutenant responsible for Territory Inspections was assumed to spend approximately 50% of his time supervising subordinates.

• Personnel were assumed to spend approximately two hours each week for administration and other activities (e.g. meetings, training, etc.).

Based on estimated workload for each unit and staff availability, the project team

calculated the average utilization of personnel assigned to the Prevention Bureau.

These data are shown in the table, which follows:

Fire Prevention Bureau Utilization

Unit	Personnel	Leave	Admin	Net Availability
High Rise	1.00	374.40	85.28	1,620.32
Sprinkler	1.00	374.40	85.28	1,620.32
Fire Inspections	11.25	4,212.00	895.44	18,292.56
Plan Review	2.25	842.40	170.56	3,667.04
Total	**15.50**	**5,803.20**	**1,236.56**	**25,200.24**

High Rise Workload	1,418.40
Sprinkler System Workload	1,340.40
Fire Inspection Workload	15,477.82
Plan Review Workload	3,464.10

High Rise Utilization	88%
Sprinkler System Utilization	83%
Fire Inspection Utilization	85%
Plan Review Utilization	94%

The following points summarize the information in the table above:

• High Rise utilization levels are approximately 88% based on workload and personnel availability. Productivity is in line with levels observed by the project team in high service level agencies.

- Sprinkler System Inspection personnel are utilized approximately 83% of available time. While just short of the 90% target typically recommended by the project team, this is a high level of productivity.

- Fire Inspection personnel are utilized approximately 85% of available time. It should also be noted that the Department has an estimated 13,549 inspectable properties within the City of Fort Lauderdale. Based on anticipated inspections completed for fiscal year 2005-06, the Department is able to inspect approximately 95% of its properties.

- Plan review personnel are utilized approximately 94% of the time. This is a high level of productivity.

Overall, based on workload and staff availability, the Prevention Bureau is appropriately staffed and personnel are effectively utilized. The project team does however, find that there are opportunities for enhancing the efficiency and effectiveness of the Bureau, including:

- The Prevention Bureau does not utilize mobile data applications to record the results of fire code inspections and automate the process for fire inspection billing. Currently, inspectors have laptops in their sedans, but do not have access to the fire inspection and permit management system remotely. This leads to duplicate data entry, since clerical personnel are needed to document the results of inspections and to prepare inspection bills. The Department should install remote access software to allow Inspectors to update inspection results and automatically generate notifications and billing from the field. This approach could reduce the need for three clerical personnel to process inspection records.

- Inspection personnel are all assigned take home vehicles. While it is reasonable to provide on-call personnel with take-home vehicles, providing employees with take-home vehicles creates a significant potential liability for the City. Many municipalities provide take-home vehicles as an employee benefit to attract and retain employees. However, the potential liabilities to the City are significant.

Overall, while the Prevention Bureau is effectively utilizing personnel and appropriately staffed, there are opportunities for improvement.

Recommendation: The Department should install remote access software on the laptops current assigned to inspectors. This will allow remote "resulting" of inspections in the field and eliminate duplicate data entry. The cost is estimated at $10,000.

Recommendation: The City should reconsider the use of take home cars for inspections personnel. The potential liability to the City is significant, while the need for personnel to have access to City vehicles is limited to on call personnel. Further, the City will save on operating and maintenance costs for the reduced use of these vehicles.

2. ANALYSIS OF THE TRAINING UNIT STAFFING SHOWS THAT PERSONNEL ARE EFFECTIVELY UTILIZED AND STAFFING LEVELS ARE APPROPRIATE GIVEN RESPONSIBILITIES AND WORKLOAD.

The training unit is responsible for coordinating the new hire academy and field training program as well as on-going fire, rescue, and emergency medical training for Fort Lauderdale Fire-Rescue. The unit is staffed by a Battalion Chief, two Captains, and an Administrative Aide. The EMS/Training Division Chief oversees the unit.

The project team first compared training unit staffing levels to the survey agencies to determine if staffing levels are outside of the range typically observed in other similarly sized agencies. The table below compared training unit staffing to total Department staffing for each of the survey respondents:

Comparative Survey Results
Training Unit Staffing Levels

Department	Sworn Personnel Training	Civilian Personnel Training	Total Personnel	Percent
Columbus	9	0	378	2%
Coral Springs/Parkland	2	0	172	1%
Davie	1	0	175	1%
Des Moines	6	0	280	2%
Fort Lauderdale	**3**	**0**	**452**	**1%**
Hallandale	1	0	85	1%
Hialeah	NA	0	334	NA
Hollywood	3	0	273	1%
Margate/Coconut creek	1	0	109	1%
Miami	NA	NA	700	NA
Miami Beach	3	0	225	1%
Miami-Dade	NA	NA	2,200	NA
Miramar	2	0	160	1%
Mobile	7	0	460	2%
Montgomery	NA	0	459	NA
Newport News	7	0	436	2%

North Lauderdale	1	0	46	2%
Pembroke Pines	NA	NA	266	NA
Plantation	2	0	65	4%
Shreveport, LA	9	0	603	1%
Sunrise	2	0	161	1%
Tacoma	5	0	406	1%
Tamarac	1	0	108	1%
Average				**2%**

As shown above, while the percentage of personnel assigned to training ranged from 1% to 4%, approximately 2% of total Department staffing was dedicated to training functions. Fort Lauderdale is slightly below this figure at approximately 1% of total Department staffing.

While comparative survey results are a useful gauge of whether training unit staffing is outside the "norm" typically observed in other similarly sized Department, the function and level of responsibility of personnel assigned to training is a better measure of staffing needs and utilization. The following points, describe the overall responsibilities of the personnel assigned to the training unit:

• The training unit is responsible for managing the nine-week new hire orientation training program for all new firefighters. In addition, the unit manages the evaluation of new recruits in the field training program. Two written and practical assessment exams are administered during the first year of service for probationary firefighters. The training unit is also involved in regular evaluation of new hires.

• The training unit develops ongoing fire, rescue, and emergency medical training materials for the Department. This includes developing monthly training objectives, producing training videos and materials, and monitoring completion of mandatory EMS recertification requirements.

• The training unit coordinates specialized rescue training including hazardous materials, technical rescue, dive team, ocean rescue, and training on new equipment.

• Training unit personnel deliver training courses. From September 2005 to September 2006, Training Officers delivered 345 hours of fire, rescue, and emergency medical training.

• Training unit personnel serve on a number of committees including: Regional Domestic Security Task Force, Broward County Fire Chiefs Training Subcommittee, Broward County Fire Chiefs Hazardous Material and Technical Rescue Teams Subcommittee, etc.

• Training unit personnel perform research and development related to new equipment and training techniques.

• The training units in the surveyed departments were universally staffed with sworn personnel.

Overall, the scope of responsibilities is extensive. Developing and coordinating the initial and ongoing training of Department personnel is a significant task. A dedicated training unit is certainly appropriate given the Department's size and range of services provided. While one could make the case for additional staffing needs in this area, the project team views ongoing training and certification management as part of the responsibilities of company officers, battalion chiefs, operations chiefs, and individual firefighters as well. Part of a company officer's job is to ensure that personnel assigned to their unit have the needed skills and qualifications to perform their job safely and effectively. It is also the responsibility of individual firefighters to ensure that their certifications are maintained. In sum, the project team finds that the training unit is appropriately staffed given workload demands.

3. PERSONNEL ASSIGNED TO THE EMS UNIT ARE HIGHLY UTILIZED.

The EMS unit is responsible for overall management of the EMS program in place within Fort Lauderdale Fire-Rescue including quality assurance / quality control, research and development, and training and re-certification. The Unit is overseen by a Division Chief, who also oversees the training unit, and staffed by a Lieutenant (Captain) The EMS unit also works closely with the three EMS Captains assigned to Operations. Additional responsibilities of this unit include:

- Monitoring progress towards EMT and paramedic re-certification of all certified personnel within the Department.

- Review of "sentinel" EMS incidents to ensure compliance with established protocols, standards of care, and medical guidelines. Sentinel events include incidents such as: cardiac arrest, stroke, pediatric cardiac arrest, multiple intubations, field saves, and all fatalities. The EMS unit reviews approximately 25 to 30 incidents each month. EMS Captains assigned to Operations provide initial review of these incidents as well.

- Research and development of new medical equipment and techniques. Training is provided by the unit on the proper use of new equipment and new medical guidelines and EMS practices.

- Coordination of provision of EMS services for special events and sporting events within the City. The City hosts a number of events throughout the year including McDonald's Air & Sea Show, Fort Lauderdale International Boat Show, Fort Lauderdale A1A Marathon, and pre-season sporting events and training camps.

- Management of probationary firefighter EMS training and field evaluation program. The training unit and EMS unit work closely to evaluate probationary firefighters utilizing formal five month and 12 month evaluations and daily progress reports from EMS "preceptors" assigned to new firefighters.

Overall, the range of responsibilities for personnel assigned to the EMS unit are broad. Although not easily quantified, the workload associated with managing the EMS program of the Department is extensive. As with training, the project team views these roles as the responsibility of EMS managers, company officers, and Operations Chiefs. In fact, the Department utilizes and involves a number of personnel and positions within the Department in EMS training, quality assurance, research and development and on-going assessment. Three EMS Captains are assigned to the Operations Division who provide initial quality control and support to the ambulance units. Company Officers and Operations Chiefs (i.e. Battalion Chiefs, Division Chiefs, Ops Chief) also provide ongoing supervision and oversight of the EMS program. As a result, the project team finds that staffing levels within the EMS unit are appropriate.

4.   ANALYSIS OF COMMUNICATIONS OPERATIONS SHOWS THAT THE DISPACH CENTER IS APPROPRIATELY STAFFED. HOWEVER, THERE ARE OPPORTUNITIES TO IMPROVE THE EFFICIENCY OF EMERGENCY COMMUNICATIONS.

Several approaches can be used to assess the staffing needs of a public safety communications center serving individual or regional consortia of agencies.   These approaches include the following methods.

- Methods based on comparisons with other agencies. These methods can be misleading because the workload, technology and service level requirements vary tremendously among agencies.

- Methods based on staffing a targeted number of "fixed posts" allocated on a functional basis (e.g. call taker, law enforcement radio, fire / rescue radio, etc.). These approaches are flawed because they do not tie the staffing to the actual workload.

- Methods based on a thorough analysis of the actual workload coming into a dispatch center. The workload includes the receipt and processing of calls from citizens, the provision of Emergency Medical Dispatch (EMD) instructions to callers, the dispatch of apparatus and personnel to incidents and the management of communications during an incident's duration.

The project team used a third, quantitative, methodology for assessing communications staffing needs based on actual workloads in the fire dispatch center. The following paragraphs summarize this approach, its assumptions and the call-time standards used.

- The analytical process assumes that communication center workload relationships are relatively constant from one agency to another and in a single agency over time and under varying conditions. These relationships include:

    - The total number of telephone calls received in a communications center expressed on a "per incident" or "per call for service" basis.

    - The total number of radio transmissions handled in a communications center expressed on a "per incident" or "per call for service" basis.

    - The total number of other workloads handled and expressed on a "per incident" or "per call for service" basis.

• Since most agencies do not track individual work elements of a communications center, such as the number of transmissions, and since virtually no agency consistently measures the time taken for each task type, standards are borrowed from other agencies and checked, where data exists, against workloads handled in the dispatch centers being studies.

– These standards were developed by the project team and others using detailed time and motion studies of communications centers nation-wide. These centers incorporated CAD technology, provided Emergency Medical Dispatch procedures (EMD) and served both fire and emergency medical service providers.

• Since fire/EMS **calls for service** are typically counted consistently and by most agencies, these communications "standards" were converted on the basis of total minutes of workload per call for service.

– That is, estimates of total communications fire/EMS workload (including not only calls for service related workloads, but also workloads associated with self-initiated and administrative activities) are expressed as a ratio of time per call for service. These time standards include the following:

- For each **fire, emergency medical and service related incident**, the equivalent of 8.2 minutes of call and administrative workloads are allocated. This includes time estimates of radio, telephone and administrative tasks. The 8.2 minutes is comprised of the following elements:

•• **Call answering and routing time** - 120 seconds are allocated to process service requests, and to transfer the call to a fire / rescue dispatcher. This standard incorporates the fact that the same incident can generate multiple calls administrative / business calls that are handled by staff in the communications center. Call processing time was not used in our analysis of the dispatch workload because the Broward County Sheriff performs this function for the Fire Department.

•• 372 seconds or 6.2 minutes are allocated to radio transmissions -- this is also expressed on a per call for service basis.

• The dispatch processing time standard minutes per call time standards are then applied against known or estimated call for service workloads handled by the dispatch center. Call for service counts are distributed on a time of day basis and multiplied by the time standards described above). This calculation yields total average communications workloads on a time of day and day of week basis.

- Finally, to arrive at the number of dispatch center staff required to handle these workloads, a critical assumption needs to be made regarding the levels of productivity desired. An allowance needs to be made regarding the proportion of time which is desirable to have a dispatcher actually involved in call handling, radio transmission and related workloads. There are several reasons why direct task allocation should not be 100% of available time, including:

    - Dispatch centers that have relatively high personnel utilization levels tend to "burn out" staff leading to high employee turnover and use of sick and disability leave.

    - Communications centers that have relatively high personnel utilization levels experience "queuing" problems in which responses to incoming calls are delayed because of the number of calls or field units that must be handled simultaneously.

    - Quality begins to suffer because communication staff are cutting calls and radio transmissions short. This impacts service levels both to field units and to the public.

    The project team used a task-loading factor of 25 minutes of actual call/radio activity per communications staff per hour. The basis behind this assumption is that one-half of a "net" hour should be utilized for direct communications workloads (i.e., after shift exchange, breaks, meals, miscellaneous personnel/administrative tasks are accomplished and training are subtracted from a "gross" available hour). This 25-minute factor is divided into the amount of hourly workload in the dispatch center.

This staffing methodology was used in the remaining sections of this report to analyze current dispatch operations with one modification. The amount of time needed to answer and route calls to dispatchers was not used because call taking EMD is provided by the Broward County Sheriffs Office. Fort Lauderdale dispatchers are only involved in the dispatching of emergency apparatus. Hence, the 6.2-minute average time needed to manage dispatch transmissions to the field is used in all of the workload and staffing calculations that follow.

Exhibits 1, 2 and 3 on the following pages illustrate workload based staff requirements by hour of the day for the Department's dispatch center. The workload

analysis is based on a combined system that will generate 43,790 calls dispatched in

2005. Exhibit 1 contains the following information:

- **Column 1 – Hour of the day**

- **Column 2 – Total number of dispatched calls for service by time of day**. Time of day is important for scheduling dispatchers because of the difference between the busiest and least busy hours of the day and the need to schedule personnel to accommodate these differences. The busiest hour accounts for approximately 5% - 6% of the calls and the least busy hour accounts for approximately 2% of the calls for service.

- **Column 3 – Average number of calls for service by time of day.** The average was calculated by dividing the total number of calls in column 2 by 365 days.

- **Column 4 – Minutes of communication workload**. The amount of time spent on dispatching calls was calculated by multiplying the number of hourly calls by 6.2 minutes.

- **Column 5 – Communication staff needed to manage the workload.** This was calculated by dividing the number of minutes in column 4 by 25 to determine the number of dispatchers needed to manage the workload. 25 is based on the number of minutes dispatchers should be able to devote to dispatching emergency calls during a 60 minute period. For example, if an hour required 25 minutes of dispatching, that workload could be handled by one dispatcher.

Exhibit 1
Fire/EMS Dispatch Demand
Based on 43,790 Calls for Service

Hour of the Day	Annual # of Calls	Calls Per Hour	Minutes of Workload	Staff Required
0	1,295.00	3.50	22.00	0.88
100	1,203.00	3.30	20.40	0.82
200	1,117.00	3.10	19.00	0.76
300	934.00	2.60	15.90	0.63
400	920.00	2.50	15.60	0.62
500	880.00	2.40	15.00	0.60
600	996.00	2.70	16.90	0.68
700	1,362.00	3.70	23.10	0.93
800	1,953.00	5.40	33.20	1.33
900	2,182.00	6.00	37.10	1.48
1000	2,265.00	6.20	38.50	1.54
1100	2,366.00	6.50	40.20	1.61
1200	2,283.00	6.30	38.80	1.55
1300	2,313.00	6.30	39.30	1.57
1400	2,383.00	6.50	40.50	1.62
1500	2,428.00	6.70	41.20	1.65

Hour of the Day	Annual # of Calls	Calls Per Hour	Minutes of Workload	Staff Required
1600	2,438.00	6.70	41.40	1.66
1700	2,460.00	6.70	41.80	1.67
1800	2,319.00	6.40	39.40	1.58
1900	2,163.00	5.90	36.70	1.47
2000	2,182.00	6.00	37.10	1.48
2100	2,065.00	5.70	35.10	1.40
2200	1,739.00	4.80	29.50	1.18
2300	1,545.00	4.20	26.20	1.05
Total	**43,790.00**	5.00	743.90	1.67

The following points highlight the information above:

- As shown above, staff demand ranges from a low of 0.60 during the hour of 0500 to a high of 1.66 during the hour of 1600. This means that during slow hours, the Department needs one dispatch and during the busy hours two are needed.

- As a practical matter, two dispatchers are needed to handle call for service workload. While one dispatcher will be able to handle workload during slow hours, the variance in calls for service and the potential for multiple incidents occurring at once, requires that two dispatchers are available at all times.

Based on workload demands, the project team determined the total number of dispatchers needed to staff the communications center. This calculation is shown in the table, below:

Element	Number
Dispatchers	2.00
Shift Factor	0.24
Leave Factor	0.85
Turnover (estimated)	15%
Total Dispatchers Needed	11.63

The following points summarize the information in the table above:

- As shown above, approximately 12 dispatchers are needed based on estimated leave usage (15%), turnover (estimated at 15%), and total positions needed to cover twenty-four hour operations.

- The emergency communications center is currently authorized 12 positions. Based on the preceding analysis, the unit is appropriately staffed.

- The figure above does not include the Communications Coordinator position that is utilized half of the time (and currently less than half) supervising dispatch and the other half dealing with communications system issues. This position is

needed to provide management and supervision of dispatchers. In addition, as is the current practice, each dispatch shift should have a lead dispatcher to perform quality assurance/quality control, and supervise less experienced dispatchers.

While dispatch has an appropriate number of positions based on workload, the

project team finds that there are a number of potential improvement opportunities:

- The current process for handling emergency fire and EMS calls is not effective. The BCSO currently performs call taking duties for the Department and then forwards the information to FLFR dispatchers. BCSO does not perform emergency medical dispatch, a practice that, as discussed earlier in the report, over commits resources to EMS calls for service. This approach also creates potential delay and quality control problems, since FLFR does not have control over how call taking is performed or initial call prioritization and classification is done.

- Emergency Communications could more effectively and efficiently be operated in Law Enforcement and Fire-Rescue emergency communications were consolidated. Personnel could more effectively be utilized and the City could realize significant cost savings by taking this approach.

Overall, there are areas for improvement in emergency communications. Based

on the current approach however, the unit is appropriately staffed.

Recommendation: The City should consider consolidating police and fire emergency communications. This approach could lead to significant cost savings and improve call-processing times.

5. ANALYSIS OF OCEAN RESCUE OPERATIONS SHOWS THAT THE OCEAN RESCUE DIVISION IS APPROPRIATELY STAFFED.

Fort Lauderdale Fire-Rescue provides ocean rescue services to approximately

2.6 miles of beach within the City. The unit is authorized a total of 38 full-time

equivalents including: One Beach Patrol Captain, Five Beach Patrol Lieutenants, 22

permanent full-time lifeguards, and 50 part-time lifeguards (10 FTE's) . The Department

estimated that Fort Lauderdale Beaches had approximately 5.7 million visitors in 2004.

The Ocean Rescue Division is responsible for providing lifeguard service to from 9:45 to

5:00 p.m. seven days a week, year round.

The following points describe current operation of the Ocean Rescue Division:

- The Division deploys, at minimum, 15 lifeguards in 15 lifeguard towers spread across the City's beaches.

- Three lifeguards are utilized to provide relief to lifeguards assigned to the Towers for lunch and an afternoon break.

- Three Lieutenants are utilized to supervise lifeguards and to provide additional support and supervision of emergency incidents.

- One Captain manages daily operations and provides administrative support to the Division. In addition, a lifeguard is utilized to provide administrative support to the Captain and the Division including scheduling, payroll, etc.

The project team evaluated staffing needs utilizing two approaches. The first evaluates the Division's ability to meet daily operations needs based on current authorized staffing. The second considers whether the current staffing plan is adequate considering the workload and risk presented by the beaches within the City.

The table, below, provides a calculation of total authorized staffing needed to maintain beach operations.

Lifeguard Post Hours Needed

Position	Posts	Hours / Coverage	Days	Total Hours
Lifeguard	15.00	7.25	365	39,693.75
Supervisors	3.00	7.25	365	7,938.75

Lifeguard Net Availability

Position	# Positions	Training	Holiday/Year	Vacation	Sick	Net Hours
Full-Time						
Lifeguard	22	174	72	120	32	37,004.00
Supervisors	5	174	72	120	32	8,410.00
Part-Time						
Lifeguard	10	174				19,060.00
Total Lifeguard						**56,064.00**
Total Supervisor						**8,410.00**

The following points highlight the information above:

• As shown above, based on minimum posts needed on the beach, during regular service hours, the Ocean Rescue Division requires 39,694 hours of lifeguard coverage.

• The analysis does not include the three lifeguards assigned for coverage, since the focus of the analysis is to determine if sufficient staff resources exist to provide for this coverage.

• Minimum supervisor (Lieutenant) coverage requires 7,939 hours. Note this does not include the Ocean Rescue Captain who was not included in this calculation.

• Available full-time lifeguard hours, after considering 45 minutes of training each shift, holidays, vacation (15 days each year), and sick (4 days each year) leave, total 37,004 hours. Part-time lifeguard hours, after subtracting for training, totals 19,060 hours each year. Lunch and breaks were not included since Lifeguards work 8:00 to 5:00 and are provided a 45 minute lunch and 15 minute break, which results in 8 hours worked each day.

• Availability supervisor hours total 8,410, after subtracting for training and leave hours.

Based on hours of coverage needed and available hours, the Division has an excess of 471 supervisor hours and 8,431 lifeguard hours. Note that lifeguard hours do not include one position (2,080 hours) for office support. After excluding this figure, there is a net surplus of 6,351 hours or approximately three full time equivalents.

The project team next considered whether the staffing plan utilized by the Division is appropriate given visitation, coverage area, and risk. The United States Lifesaving Association (USLA) has developed several standards and recommendations for certification and training of Lifeguards, but has not developed clear standards on staffing. In its "Guidelines for Establishing Open Water Recreational Beach Standards" the USLA states:

> It is difficult to establish strict standards for all categories of open-water recreational beaches with regard to staffing. Each type of beach has certain factors that affect the number of lifeguards that is required. Certainly, the staffing requirements for a still-water beach at a youth camp are different from those for a public beach on the ocean near a large city. Although staffing criteria vary from

one beach to another, they all should be based on some quantifiable parameters that can provide a measure of the demand for services and financial support for both personnel and capital outlay.

Lifeguard staffing needs are likely to change from day-to-day based on time of year, weather, ocean conditions, and level of visitation. While certain high attendance days will require additional resources, other days (e.g. during poor weather) will demand fewer resources. Staffing decisions, therefore, must consider these factors on a daily basis to set appropriate staffing levels. The table, below, provides data related to visitation and rescue activities during 2006:

Activity/Element	Apr. 06	May. 06	Jun. 06	July. 06	YTD
First Aids	180	258	108	121	1,871
Contacts	6,970	18,753	5,734	7,205	74,328
Patrons	486,725	2,314,627	285,560	413,595	5,436,143
Preventions	1,718	7,696	865	1,586	18,026
Rescues	5	40	4	11	77
Victim Lives Saved	6	43	7	21	110
Traumas & Medicals	3	6	5	6	28
Missing Persons	7	480	5	-	504
EMS Calls	3	5	5	6	28
Police Calls	1	1	2	2	15

The project team finds that the current staffing plan in place is appropriate given the number of visitors to Fort Lauderdale's beaches and the service area. The Division provides service to 2.6 miles of beaches, resulting in approximately 300 yards between lifeguard towers. In addition, three supervisors patrol the beach in off road vehicles to supervise staff and to quickly respond to emergencies.

Note that there are several areas of the City's beaches which do not have City-provided lifeguard protection. The Fire Rescue Department and the City are currently evaluating various approaches to address this gap in coverage including private and publicly provided staff.

6.   SUPPORT FUNCTIONS ARE APPROPRIATELY STAFFED.

The project team also evaluated staffing in support functions within the Department including: Support Services, Financial Management, Office of the Chief, and Domestic Preparedness and Emergency Management. The table, below, summarizes the role of personnel assigned to each of these units and provides the project teams findings and recommendations:

Unit	Staffing	Roles/Responsibility	Findings/Recommendations
Financial Management	Budget Coordinator Sr. Acct. Clerk Clerk III Data Control Clerk Service Clerk (2)	Accounts payable/receivable, internal controls, payroll, budget, financial reporting. In addition, clerks assist with fire permit and inspection billing.	Based on the size of the Department's budget, number of personnel, reporting requirements, and other roles and responsibilities of this unit, staffing levels within this unit are appropriate.
Support Services	Fire Lieutenant Storekeeper II (2) Storekeeper I (1) Service Clerk (1)	Coordinating maintenance requests for station and apparatus maintenance, managing supply and equipment inventory, procurement, and logistical support.	The current equipment and supply management system is largely manual and requires the coordination of service requests with other City Departments and a number of suppliers. This system will change somewhat as the Department implements an inventory control system to automate equipment and supply requests. This system will eventually automate repair requests as well. Based on the current system however, staffing levels within support services are appropriate. The Department should re-evaluate staffing needs in this area as service and supply requests are automated.

Unit	Staffing	Roles/Responsibility	Findings/Recommendations
Domestic Preparedness & Emergency Management	Coordinator (vacant) Secretary	Develop the City's Emergency Management Plan, grant writing and research, coordinates city-wide emergency management exercises, participates in regional groups related to emergency planning, homeland security, and other issues.	It is appropriate that this position is currently organized under the Fire Department given the nature of the work and the Fire Department's role in emergency response. A dedicated position and an administrative assistant is an appropriate level of staffing given workload requirements and need for coordination of services citywide.
Office of the Chief	Secretary III Secretary II (2) Receptionist	Provide administrative and clerical support to the Administration, Operations, and Office of the Chief.	Given overall staffing levels within the Department and size of each of the Divisions, it is appropriate to have dedicated administrative personnel assigned to the Chief and Assistant Chief as well as a Receptionist position.

APPENDIX A

PROFILE OF THE FIRE-RESCUE DEPARTMENT

This profile of the Fort Lauderdale Fire-Rescue Department (FLFRD) provides summary information regarding the current organization and operations of the FLFRD. The information contained in this profile was developed through interviews of FLFRD management and staff, review of available documents, and access to computerized records and statistics.

A summary of staffing and organization, roles and responsibilities, and operational / workload are provided for the following areas:

- General Overview

- Office of the Fire Chief

    - Emergency Preparedness

- Operations Division

- Administrative Services Division

    – Emergency Medical Services

    – Training / Special Operations

    – Fire Prevention

    – Support Services / Communications

    – Special Projects Battalion Chief

    – Ocean Rescue

    – Fiscal / Budget

The first section provides a general overview of the FLFRD and the City of Fort Lauderdale, including the basic organizational structure and budget information.

1.   GENERAL OVERVIEW OF THE CITY OF FORT LAUDERDALE

Fort Lauderdale has been and is expected to continue to be a dynamically growing community according to population data compiled by the City's Planning and Zoning Department. The data in the table below represent a compilation of City and County population estimates based on the number of anticipated dwelling units, household size estimates and unit vacancy rates. The data includes only estimates for the City's current boundaries. It does not include any estimates for unincorporated areas of the Broward County that might be annexed during the next several years. According to the data the population of the City is expected to grow by 17% between 2005 and 2015 and 28% between 2005 and 2030. Like all population estimates used for planning purposes, actual growth rates need to be recalibrated every few years to ensure accuracy.

City of Fort Lauderdale - Population Growth and Projections, 1990 – 2030

Year	Population	% Change
1990	152,129	----
2000	155,870	2.5%
2005	172,299	10.5%
2010	177,635	3.1%
2015	182,624	2.8%
2020	190,260	4.2%
2025	211,844	11.3%
2030	221,637	4.6%

In addition to planning Fire-Rescue services for the future population of the City's residents, planning should take into consideration how service contracts affect service demands and resource needs. At the present time, the Fort Lauderdale Fire-Rescue

Department provides service to two municipalities via contracts – Wilton Manors and Lazy Lakes. The current population and population estimates for these municipalities are listed in the exhibit below. The populations of the contract municipalities currently represent approximately 15% of the Department's service population.

Contract Cities - Population Growth and Projections, 1990 – 2030

Year	Wilton Manor	Lazy Lakes
1990		----
2000	12,074	34
2005	12,858	39
2010	12,550	34
2015	13,258	34
2020	13,810	34
2025	14,152	34
2030	14,443	34

2. FIRE DEPARTMENT OVERVIEW

The Fort Lauderdale Fire-Rescue Department provides fire suppression, fire prevention and inspections services, emergency medical care, hazardous materials response, technical rescue team response (dive rescue, confined space, elevated victim, trench rescue, collapse rescue) ambulance transportation and beach lifeguard services to residents of the City and, by contract, to Wilton Manors and Lazy Lakes (the Department does not provide fire prevention, fire inspection, or fire investigation services to the City of Wilton Manors or Lazy Lake). The Department also conducts public education demonstrations and sprinkler and standpipe tests. In addition, it participates in Fire-Rescue mutual aid agreements with Broward County and neighboring cities as well as an automatic aid with Oakland Park.

The Vision of the Fort Lauderdale Fire-Rescue Department is "Striving to be recognized as the nation's best provider of fire, rescue, medical and community

services." Its Mission Statement is **SERVICE** – **S**haping the future; **E**xcellence in training, **R**educing risk, **V**aluing technology, **I**nitiating community partnerships, **C**ustomer focus and quality service 24/7 and **E**nhancing community services. The men and women in the Department value challenge, commitment, communication, compassion, diversity, integrity, selflessness, sensitivity teamwork and trust.

(1) Organization and Staffing

The organization chart below provides an overview of the how the Department is organized and the number of budgeted personnel in the various divisions of the Department.

Organization of the Fort Lauderdale Fire-Rescue Department

```
                        ┌─────────────────────┐
                        │ Office of the Fire   │
                        │ Chief                │
                        │ 1 Sworn              │
                        │ 2 Civilian           │
                        └─────────────────────┘
        ┌──────────────────┬──────────┴──────────┬──────────────────┐
┌───────────────┐ ┌─────────────────┐ ┌───────────────┐ ┌───────────────┐
│ Administration│ │ Domestic        │ │ Operations    │ │ Special       │
│ Assistant     │ │ Preparedness    │ │ Assistant     │ │ Projects      │
│ Chief         │ │ Emergency       │ │ Chief         │ │ Battalion     │
│ 1 Sworn       │ │ Managment       │ │ 1Sworn        │ │ Chief         │
│ 1 Civilian    │ │ Coordinator (1) │ │ 1 Civilian    │ │ 1 Sworn       │
│               │ │ Secretary (1)   │ │               │ │               │
└───────────────┘ └─────────────────┘ └───────────────┘ └───────────────┘
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| Financial Management 6 Civilians | Fire Prevention Support Services 20 Sworn 18 Civilians | Shift A 12 Fire Stations 118 Sworn | Shift B 12 Fire Stations 118 Sworn | Shift C 12 Fire Stations 117 Sworn |

| EMS, Training Specials Operations 7 Sworn 2 Civilian | Special Projects Battalion Chief 1 Sworn |

| Ocean Rescue 38 Civilians |

The following points summarize information about the organization and staffing of the Department

- The Department has a budgeted complement of 452 personnel. This is a slight increase over the budgeted staff of 439 personnel in FY04-05. The Budget includes staffing for:

    – 382 sworn firefighters and emergency medical technicians.
    – 12 emergency communication dispatchers.
    – 38 lifeguards.
    – 21 professional and Administrative personnel.

- Several positions are vacant including the Fire Chief, executive Deputy Chief (equivalent to an Assistant Chief) and the Emergency Preparedness Coordinator as well as several dispatcher positions.

- The largest Division of the Department includes the 353 firefighters and Fire Officers who staff the emergency apparatus. During the calendar year 2006 the Department will conduct three recruit classes in order to keep the Operations Division fully staffed.

    The following table lists the number and classification of personnel in each division of the Department.

Function	Sworn Personnel	Civilian Personnel
Office of the Fire-Rescue Chief	1 Fire Chief 1 Exec. Deputy Chief	2 Secretaries 1 Domestic Preparedness coordinator 1 Receptionist
Division of Administration	1 Assistant Chief	1 Secretary
Financial Management		1 Department Coordinator 1 Senior Account Clerk 1 Clerk III 1 Data Control Clerk 2 Service Clerks
Ocean Rescue		1 Beach Patrol Captain 5 Beach Patrol Lieutenants 22 FT Beach Patrol Lifeguards 10 PT FTE's Lifeguards
Emergency Medical Services	1 Division Chief 1 Fire Lieutenant (temporary rank of Captain)	1 Service Clerk
Training and Special Operations	1 Battalion chief 2 Lieutenants (temporary rank of Captains)	
Fire Prevention	1 Division Chief 1 Battalion Chief 4 Fire Safety Lieutenent 11 Fire Inspectors 1 Fire Prevention Engineer	1 Secretary
Special Project	1 Battalion Chief	

Function	Sworn Personnel	Civilian Personnel
Support Services	1 Fire Lieutenant (temporary rank of Captain)	3 Store Keepers 1 Communications Coordinator 12 Communication Specialists (3 work as supervisors)
Operations	1 Assistant Chief 3 Division Chiefs 13 Battalion Chiefs 3 EMS Captains 71 Fire Lieutenants 72 Driver-Engineers 191 Firefighter/Paramedics	

(2)   Fire Department Budget

The proposed budget for FY06-07 is $61.6 million dollars. The following exhibit provides information about the Department's operating budget during the four most recent fiscal years.

Year	Income	General Fund	Total	% Change	Basis
FY03-04	$16,427,676	$27,404,741	$43,832,417	-----	Actual
FY05-05	$20,802,486	$30,308,022	$51,110,508	16.6%	Actual
FY05-06	$24,187,463	$34,828,405	$57,015,868	15.5%	Projected
FY06-07			$61,638,222	8.1%	Budgeted

The following points summarize information about the Department's Budget.

•   The $61.6 million budget in FY06-07 represents 24% of the City's total budget.

•   The budget has increased by an average of 12% during the past four fiscal years. During this period the authorized strength of the Department remained relatively constant.

•   It will cost citizens approximately $357 each for fire, rescue and lifeguard services in FY06-07.

The table below itemizes the major revenue categories in the Department's FY05-06 budget. The revenue budget totaled slightly over $57 million.

FY05-06 Revenue Budget

Revenue Budget	Amount	Percent
General Fund	$32,828,405	58%
Assessment	$13,612,097	24%
EMS Fees	$4,099,848	7%
FF Pensions	$2,068,000	4%
Prevention Fees	$1,734,035	3%
Municipal Contracts	$915,435	1.6%
Airport Contract	$841,567	1.5%
Haz Mat Contract	$488,959	0.9%
Other	$243,999	0.4%
Alarm Response Fee	$183,523	0.3%
Total	**$57,015,868**	**100%**

The following points summarize information about the Department's revenue budget.

• The bulk of the funds (58%) come from the City's General Fund.

• The Fire/Rescue Fire Assessment Fee accounts for 24% of the Department's revenues. The Fire Assessment Fee is based on a flat residential unit fee of $94.00 and a per foot assessment for commercial space that ranges from a low 0.85¢ for warehouses under 2,000 square feet to 32.4¢ per foot for institutional buildings over 100,000 square feet.

• Fire Prevention's fees for inspections, plan review and alarm tests account for 3% of the revenue budget.

• Service contracts with Wilton Manors and Lazy Lakes, the Executive Airport and Broward County for Haz-mat services account for 4% of the revenues.

• False alarm response fees account for 0.3% of the revenues.

The table, below, itemizes the major expenditure categories in the Department's FY05-06 budget. Expenditures totaled slightly over $57 million.

Fire-Rescue Department Income Detail – FY06-07

Expenditures	Amount	Percent
Salaries and Wages	$31,036,398	54%
Fringe Benefits	$16,221,139	28%
Insurance/Liabilities	$6,517,910	11%
Products/Services	$2,497,011	4%
Debt Service	$431,271	0.8%
Capital Equipment	$312,139	0.5%
Total	**$57,015,868**	**100%**

The following points summarize information about the Department's revenue budget.

•   82% of the expenditures ($47.2 million) were allocated to personnel expenses. Salaries and wages accounted for 54% of the expenditures while fringe benefits consumed 28% of the expenditures.

•   Insurance and liabilities accounted for 11% of the expenditures.

•   Produces and services accounted for 4% of the budget.

•   Debt service and capital equipment (excluding apparatus) accounted or 1.3% of the budget.

In addition to the operating budget, the Department has a long-range capital improvement expenses. These items are not itemized separately in the operating budget. Funding for the acquisition of apparatus is in the City's Fleet Services budget. The Department pays an annual fee to Department to replace all of its apparatus over the next six years.

The table, below, presents information about the department salary and wage scales. The amounts for management are based on FY05-06 schedules while the amounts for Local 765 are based on FY06-07 scales.

Salaries and Wages

40 Hour Positions	Low	MID	HIGH	Classification
Assist Chief of Operations	$82,243	$97,780	$119,100	Management II
Assistant Chief of Administration	$82,243	$97,780	$119,100	Management II
Division Chief	$78,998	$93,392	$110,489	Management III
Battalion Chief	$70,096	$82,846	$97,968	Management III
Communications Coordinator	$44,137	$49,982	$57,948	Management
Lieutenant/Inspector 1/FFPM	$61,256	$64,251	$70,803	Local 765
Driver/Engineer/Inspector II	$49,670	$54,537	$62,940	Local 765
FF/Paramedic	$40,622	$49,129	$59,404	Local 765
Communications Specialist	$31,740	$35,921	$42,702	Local 765
48 Hour Positions				
Division Chief	$76,398	$90,792	$107,889	Management
Battalion Chief	$67,496	$80,246	$95,368	Management
Lieutenant	$61,251	$64,296	$70,761	Local 765
Driver/Engineer	$49,795	$54,537	$63,073	Local 765
Firefighter/Paramedic	$40,659	$49,171	$59,454	Local 765

3.   OFFICE OF THE FIRE CHIEF

The Office of the Fire Chief is responsible for setting the overall policies and direction of the Fort Lauderdale Fire-Rescue Department. The Chief develops the Department's annual budget and capital improvement plan, advocates on behalf of the Department, is the primary contact with the public, and provides overall leadership for the Department.

(1)   Key Roles and Responsibilities

This section provides summary information regarding the office of the Fire Chief, which is represented as follows:

**Current Organization of the Office of the
Fire Chief**

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                      ┌─────────────────┐
                      │   Fire Chief    │
                      │      (1)        │
                      └────────┬────────┘
          ┌────────────────┐   │   ┌────────────────┐
          │  Secretary III │   │   │  Receptionist  │
          │      (1)       │   │   │      (1)       │
          └────────────────┘   │   └────────────────┘
          ┌────────────────┐   │
          │  Secretary II  │   │
          │      (2)       │   │
          └────────────────┘   │
    ┌──────────────┬───────────┴──────────┬──────────────────┐
┌─────────────┐ ┌──────────────────┐ ┌──────────────────┐
│ Emergency   │ │ Special Projects │ │ Executive Deputy │
│ Management  │ │ Battalion Chief  │ │   Chief (1)      │
│ Coordinator │ │      (1)         │ │                  │
│ (1)         │ │                  │ │                  │
└─────────────┘ └──────────────────┘ └──────────────────┘
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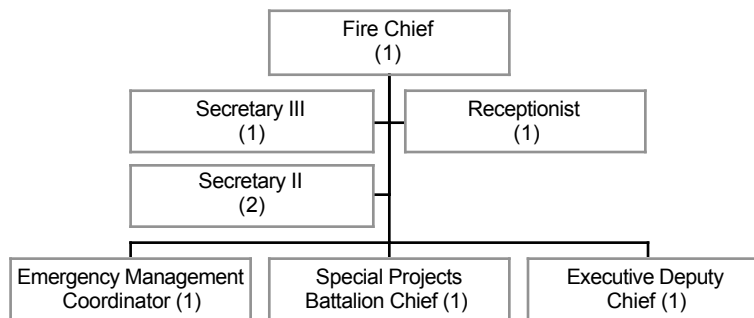
The following table provides the number of the positions authorized, as well as

the key roles and responsibilities of each of the classifications:

Position / Classification	Positions	Key Roles and Responsibilities
Fire Chief	1	• Provides the executive management of the Fire Department, including the development of policies and procedures, providing leadership for future services, budget development, identifying service gaps, working with the elected officials and City management to ensure that the FLFD interests are considered, etc. • Provides education regarding how the FLFD operates, what its' services are, what the resource needs are, etc. • The Fire Chief position is currently vacant. Candidates for the position are currently being interviewed.
Secretary III	1	• This position is responsible for providing administrative support to the Fire Chief including, but not limited to, correspondence, filing, answering phones and scheduling appointments and other projects as assigned by the Fire Chief. • This is a 40 hour position.
Executive Deputy Chief	1	• Performs special projects under the direction of the Fire Chief. • This position is currently vacant.

Position / Classification	Positions	Key Roles and Responsibilities
Emergency Preparedness Management Coordinator	1	• This position if responsible for developing the emergency management plan for the City of Fort Lauderdale including developing risk assessments and action plans for handling large emergency incidents. • Coordinates joint emergency management exercises for the City of Fort Lauderdale. • Administers and solicits federal and state grants related to Homeland Security and Emergency Management.
Secretary II	2	• The Secretaries provide administrative support to the Assistant Chief of Administration and Assistant Chief of Operations. • Report directly to their assigned Assistant Chiefs.
Receptionist	1	• Handles phone calls, visitors, and other administrative tasks as assigned by the Chief or Assistant Chiefs.

4. OPERATIONS DIVISION

The Operations Division is primary responsibility is to provide twenty-four hour rapid medical, rescue, and fire response to emergency incidents within the City of Fort Lauderdale and surrounding areas through mutual aid, provide aircraft rescue and firefighting services at the Executive Airport, regional teams (e.g. Hazardous Materials and Technical Rescue, Urban Search and Rescue), and contracts for service with Wilton Manors and Lazy Lake.

(1) Description of Service Environment

This section provides information on target hazards, unique service responsibilities, and general service environment considerations. The following points describe the Fort Lauderdale Fire-Rescue's service environment:

• The City encompasses 165 miles of inland navigable waterways and 7 miles of beachfront. These waterways are spanned by 8 drawbridges and 1 swing bridge. Fort Lauderdale also has 18 marinas in its borders.

- The City has approximately 300 high rises (greater than 75 feet), consisting of 112 business properties and 188 residential properties.

- The City has 48 schools, 7 hospitals, 42 assisted living facilities, 6 nursing homes, and 1 jail within its boundaries.

- The City attracts a large number of visitors each year. Approximately 10.1 million people visited Fort Lauderdale during 2005. The City is home to a number of resorts and the Greater Ft. Lauderdale/Broward County Convention Center.

- Two major railroads intersect the City including the Florida East Coast railroad that runs through the heart of the Downtown business and entertainment district.

- Two interstate highways intersect Fort Lauderdale, I-95 and I-595 that run north/south through the middle of the City and south/west through the southern portion of the City. I-95 is estimated to carry 298,000 vehicles per day.

- The Department provides service to the Fort Lauderdale Executive Airport, which houses 700 aircraft including 115 jets. This airport is the 8[th] busiest general aviation airport in the country.

  The next section describes the general organization of the Operations Division.

(2)   Organization of the Operations Division.

  The chart, below, shows the current organization of the Division.

Current Organization of the Operations Division
Fort Lauderdale Fire Rescue

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                          ┌─────────────────┐
                          │   Fire Chief    │
                          └────────┬────────┘
                          ┌────────┴────────┐
                          │ Assistant Chief │
                          │   Operations    │
                          └────────┬────────┘
                          ┌────────┴────────┐
                          │ Division Chief  │
                          │    Shift A      │
                          │    Shift B      │
                          │    Shift C      │
                          └────────┬────────┘
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Battalion Chief 2 Shift A Shift B Shift C	Battalion Chief 13 Shift A Shift B Shift C	Battalion Chief 35 Shift A Shift B Shift C	Battalion Chief Floater Shift A Shift B Shift C
Station 2 / Station 3	Station 13 / Station 29	Station 16 / Station 35	
Station 46 / Station 47	Station 49 / Station 54	Station 53 / Station 88	
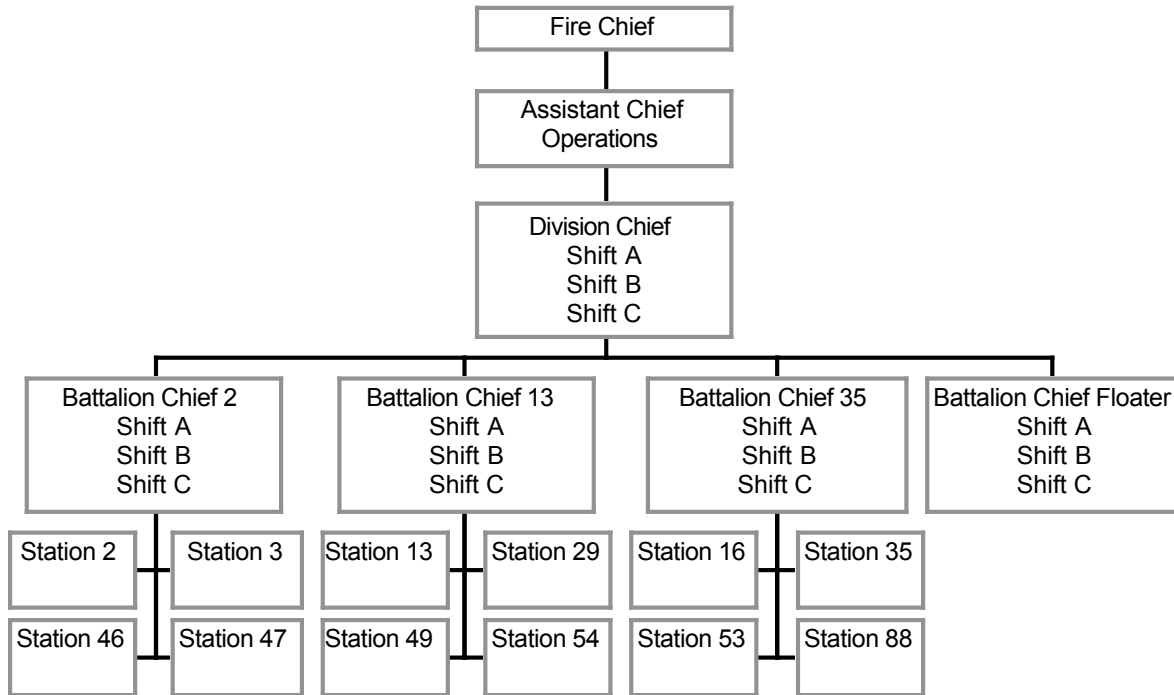
The table below shows the number of fire stations and companies assigned to each Battalion within the Operations Division:

Battalion	# of Fire Stations	# of Staffed Units
2	4	• 5 Engines • 1 Ladder • 7 Rescues
13	4	• 4 Engines • 1 Ladder • 3 Rescues • 1 Fireboat
35	4	• 3 Engines • 1 Ladder / HazMat • 3 Rescues • 1 Support Unit • 1 ARFF Unit

The map, below, shows the locations of current station utilized by FLFRD:
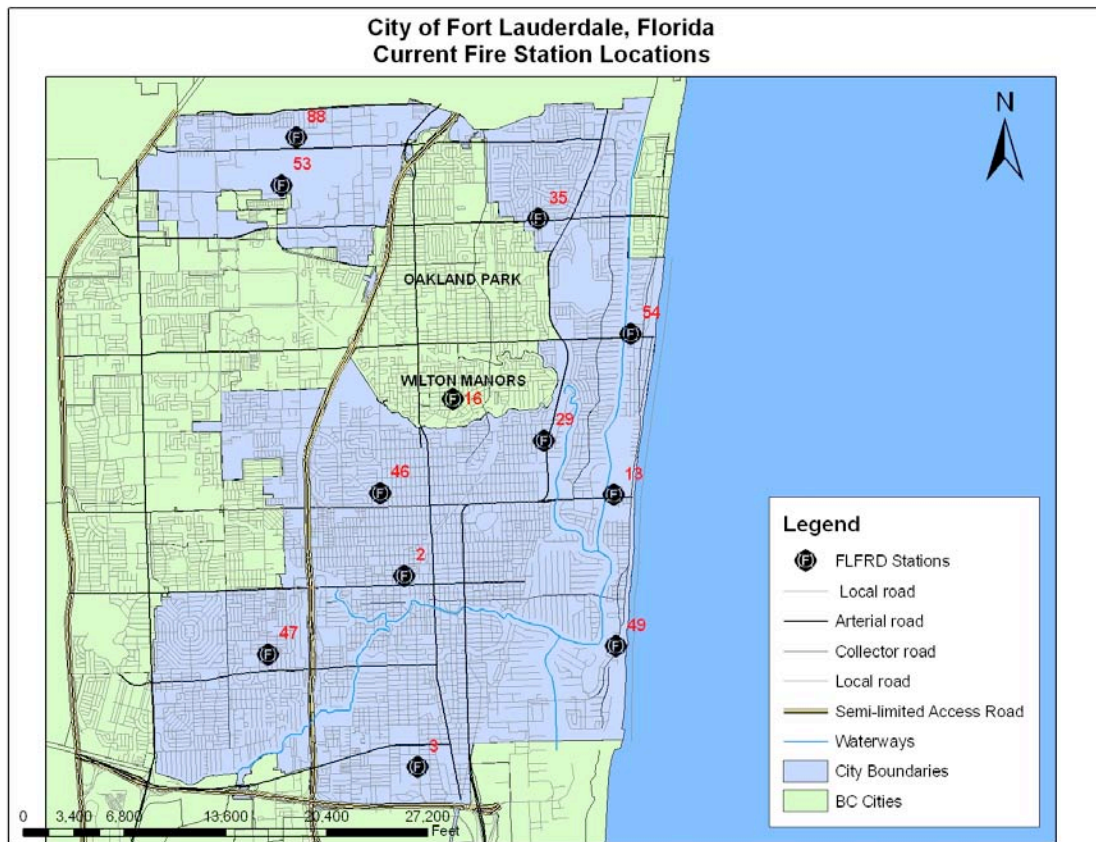
The next section provides additional information on staffing requirements.

(2.1) Battalion 2

The first table shows staffing of units assigned to Battalion 2:

Unit	Officer	Driver	Firefighter	Paramedic	Total Battalion Minimum
Engine 2	1	1	1		11
Ladder 2	1	1	1		11
Rescue 2				2	7
Engine 8	1	1	1		11
Rescue 8				2	7
Engine 3	1	1	1		11
Rescue 3				2	7
Engine 46	1	1	1		11
Rescue 46				2	7
Rescue 246				2	7
Engine 47	1	1	1		11
Rescue 47				2	7
Rescue 247				2	7
Total	**6**	**6**	**6**	**14**	**112**

As shown above, minimum shift staffing for Battalion 2 includes: 6 Officers, 6 Drivers, 6 Firefighters, 14 FF/Paramedics, for a total of 32 personnel. With the Battalion Chief, daily minimum staffing is 33 personnel. Total minimum Battalion staffing, for all shifts, is 112 personnel plus 3 Battalion Chiefs (note this figure does not provide any staffing for use of leave coverage). Minimum Battalion staffing was arrived at by dividing daily shift staffing by 28.5% (48 hours / 168 hours in a week).

(2.2) Battalion 13

The table below shows daily minimum staffing by unit within Battalion 13:

Unit	Officer	Driver	Firefighter	Paramedic	Total Battalion Minimum
Engine 13	1	1	1		11
Ladder 13	1	1	1		11
Rescue 13				2	7
Engine 29	1	1	1		11
Engine 49	1	1	1		11
Rescue 49				2	7
Fireboat 49*					-
Engine 54	1	1	1		11
Rescue 54				2	7
Total	**5**	**5**	**5**	**6**	**74**

* The fireboat is staffed by personnel assigned to Engine 49 and Rescue 49.

As shown above, minimum shift staffing for Battalion 13 includes 5 Officers, 5 Drivers, 5 Firefighters, 6 FF/Paramedics, for a total of 21 personnel. With the Battalion Chief, daily minimum staffing is 22 personnel. Total minimum Battalion staffing, for all shifts, is 74 personnel plus 3 Battalion Chiefs (note this figure does not provide for any staffing for use of leave coverage).

(2.3) Battalion 35

The table below shows daily minimum staffing by unit within Battalion 35:

Unit	Officer	Driver	Firefighter	Paramedic	Total Battalion Minimum
Engine 16	1	1	1		11
Rescue 16				2	7
Engine 35	1	1	1		11
Ladder 35	1	1	1		11
Rescue 35				2	7
Truck 53	1	1			7
Rescue 53				2	7
Engine 88	1	1	2		14
Support 88			1		4
Total	**5**	**5**	**6**	**6**	**77**

As shown above, minimum shift staffing for Battalion 35 includes 5 Officers, 5 Drivers, 6 Firefighters, 6 FF/Paramedics, for a total of 22 personnel. With the Battalion Chief, daily minimum staffing is 23 personnel. Total minimum Battalion staffing, for all shifts, is 77 personnel (note this figure does not provide for any staffing for use of leave coverage).

Total daily minimum staffing is 75 firefighters assigned to companies plus 3 Battalion Chiefs, 1 EMS Captain, and 1 Division Chief for a total of 80 personnel. In addition, it is important to note the following regarding minimum daily staffing requirements:

• A minimum of 7 Hazardous Materials team members are required to be on duty at all times. The HazMat team consists of 52 firefighters, driver-engineers, and lieutenants assigned to three shifts. The members of the HazMat team staff Engine 88 and Rescue 53. The team will consist of 16 paid members on each shift effective January 1, 2007. Currently the department has 14 paid members per shift. Working members receive a 3% stipend while non-working members receive 2% (i.e. Haz Mat certified but not assigned to a Haz Mat unit).

• A minimum of 6 Technical Rescue Team members are required to be on duty at all times. TRT members staff Engine 49, Rescue 49, and Ladder 13. Personnel assigned to Station 49 are also responsible for water based TRT response. There are a total of 55 firefighters across three platoons that are considered TRT technical specialists. There are currently 14 paid members per shift. This figure will increase to 16 paid members effective January 1, 2007. Members are paid in the same manner as Haz Mat team members.

The next section provides information on lost time and daily staffing.

(3)   Lost Time and Average Daily Staffing

Lost time is the amount of time personnel assigned to Operations are off-duty when they are assigned to work.   Operations personnel staff the Department's emergency command vehicles and emergency apparatus (ambulances and fire trucks). Operations personnel include Division Chiefs, Battalion Chiefs, Fire Lieutenants, Drive-Engineers and FF/Paramedics.   During FY04-05, the Department had a total of 345 budgeted positions in Operations.   Operations personnel are scheduled to work 48 hours per week in two weekly 24-hour shifts.   The 345 personnel were scheduled to work a total of 861,120 hours (345 personnel X 48 hours X 52 weeks) during the year.

During the fiscal year Operations personnel were off duty during their scheduled workdays due to a variety of reasons. They took a total of 154,740 hours off in FY 04-05. Each Fire Officer and Firefighter in operations averaged 438 hours of lost time during the fiscal year. This amounts to 17.9% of the hours they were scheduled to work (154,740 lost time hours ÷ 861,120 scheduled hours).

The reasons for the lost time and the amount of time credited to each type of absence are listed in the table below. Vacation, sick and injured-on-duty absences accounted for nearly 86% of the lost time.

Lost Time – Fiscal Year 04-05
Based on 345 Budgeted Personnel In Operations

Lost Time Reason	Hours	Percent
Vacation	85,088	55.0%
Sick	39,259	25.4%
Sick (Family)	11,181	7.2%
Injured-on-duty	9,193	5.9%
Funeral	2,077	1.3%
Suspended	1,944	1.3%
Vacation (From sick time pool)	1,456	0.9%
Administrative Leave - Off shift	1,418	0.9%
Injured off duty – On light duty	960	0.6%
Union Business	380	0.2%
Holidays	368	0.2%
USAR Deployment	336	0.2%
Training	333	0.2%
Jury Duty	263	0.2%
Personal Leave	219	0.1%
Light Duty	144	0.1%
Emergency	85	0.1%
AWOL	36	0.0%
Total Lost Time	**154,740**	**100.0%**

The amount of overtime in a fire department with minimum staffing requirements is a function of the number of personnel assigned to a shift and the amount of time off taken by personnel. Time off is frequently referred to a lost time. Based on the table above, suppression and medical personnel took a total of 6,447 shifts off in 2005. Based on authorized staffing of 345 personnel assigned to three platoons, this means that an average of 81 personnel (including Battalion and Division Chiefs) were available for duty each day during FY 2004-05 (345 x 48 x 52 x 82.1% / 365 / 24).

(4)   Roles and Responsibilities

The table below shows the number of authorized positions within the Operations Division and describes the key roles and responsibilities of personnel:

Position / Classification	Authorized Positions	Key Roles and Responsibilities
Assistant Chief - Operations	1	• Responsible for overall management and leadership of the Operations Division. • Develops policies and procedures and budget for Operations Division. • Ensures that performance objectives and service levels are met. • Directly supervises the 3 Division Chiefs. • Works an eight-hour day shift.
Division Chief	3	• Response for overall management and supervision of daily shift operations including direct supervision of the on-duty Battalion Chiefs and EMS Captain. • Respond to all greater alarm structure fire calls and large incidents. • Report directly to the Assistant Chief of Operations. • Work the same schedule as line firefighters, which consists of 24-hour shifts on a 24 hours on 48 hours off schedule with a Kelly day every 7th shift.
Battalion Chief	13	• Battalion Chiefs are responsible for management and supervision for companies assigned to them. • Respond to all structure fire calls and multi-company incidents. • Responsible for narcotics control, coordination of fleet and station maintenance requests, and for review of incident reports. • Ensure that company level training and pre-fire surveys are performed. • There are 3 Battalions. When a 4th B.C. is on shift, that B.C. assists the Division Chief with administration, scheduling and payroll. • Work a 24-hour shift.
EMS Captain	3	• Provides EMS supervision and oversight to the ambulance units. • Responds to serious EMS incidents including: rollovers, major incidents requiring more than 1 rescue, and all incidents requiring a medical sector. • Provides EMS continuing education and ensures the completion of mandatory training for recertification. • Tests and provides training on new medical equipment. Acts as 24 hour computer help line for Medusa and Panasonic Toughbook problems. • Works a 24-hour shift, same as other operations personnel.

Position / Classification	Authorized Positions	Key Roles and Responsibilities
Lieutenant Drive/Engineer Firefighter/Paramedic/EMT	71 72 191	• Lieutenants are the supervisors in charge of the engine and truck companies. They are the incident commander when the first to arrive on scene and provide direction to firefighters assigned to them. They also deliver training and provide QA/QC for incident report. • Driver/Engineers drive the engines and ladder trucks. They also operate the pump in the event of a structure fire. • All personnel respond to emergency calls for service and perform a number of rescue, emergency medical, and fire suppression tasks at the scene of an incident. • Rescues are staffed by one firefighter/medic and one Crew Chief who serves as the supervisor for the unit. • All personnel work a 24 hours on/48 hours off schedule with every 7th shift off.
Total	**354**	

(5) Workload Indicators

This section provides information on call for service workload over the period September 1, 2003 to August 31, 2006. The first table, below, describes overall workload trends for the 3-year period.

Fort Lauderdale Fire-Rescue
Calls for Service, Sept. 1, 2003 to Aug. 31, 2006

Period	Total	Priority	Non Priority
FY 03-04	40,122	37,821	2,301
FY 04-05	42,920	39,688	3,232
FY 05-06	42,778	39,952	2,826

As shown above, the Department handled 42,778 incidents from September 1, 2005 to August 31, 2006. This represents an increase of 7% from the same period in 2003-04. Also note that approximately 93% of total calls for service were listed as "priority" calls in each of the three years examined.

The next table, below, shows calls for service by hour of time for the three-year period:

Fort Lauderdale Fire-Rescue
Calls for Service by Hour, 9/03 to 9/06

Hour	Total	FY 2003-04	FY 2004-05	FY 2005-06	Avg./ Hour
0000	4,007	1,317	1,372	1,304	3.66
0100	3,441	1,169	1,139	1,126	3.14
0200	3,242	1,033	1,081	1,120	2.96
0300	2,840	947	959	928	2.59
0400	2,622	821	866	923	2.39
0500	2,428	726	851	842	2.22
0600	2,911	932	964	1,008	2.66
0700	4,040	1,322	1,364	1,343	3.69
0800	5,476	1,696	1,812	1,948	5.00
0900	6,150	1,938	2,109	2,086	5.62
1000	6,655	2,119	2,288	2,231	6.08
1100	6,906	2,171	2,312	2,406	6.31
1200	6,704	2,174	2,269	2,240	6.12
1300	6,742	2,105	2,223	2,392	6.16
1400	6,758	2,080	2,337	2,325	6.17
1500	6,864	2,173	2,403	2,270	6.27
1600	6,867	2,150	2,341	2,351	6.27
1700	6,943	2,219	2,395	2,304	6.34
1800	6,727	2,154	2,269	2,279	6.14
1900	6,260	1,956	2,153	2,136	5.72
2000	6,135	1,939	2,097	2,079	5.60
2100	5,786	1,809	1,967	1,981	5.28
2200	5,148	1,680	1,751	1,699	4.70
2300	4,557	1,492	1,598	1,457	4.16
Total	**126,209**	**40,122**	**42,920**	**42,778**	**115**

The following points highlight the information above:

• As shown above, the Department responded to 126,209 incident over the three-year period, for an average of 115 calls each day.

• Average calls for service per hour ranged from a high of approximately 6 during the hours of 0900 to 1900, to a low of approximately 2 during the hours of 0400 to 0600.

The next table shows calls for service by type over the same time period:

Fort Lauderdale Fire-Rescue
Calls for Service by Type, 9/03 to 9/06

Call Type	2003-04	2004-05	2005-06	%
Fire	818	836	935	2%
Overpressure Rupture, Explosion	24	18	31	0%
EMS & Rescue	25,380	26,409	25,710	62%
Hazardous Conditions, no fire	1,051	1,538	1,308	3%
Service Call	1,970	2,066	2,062	5%
Good Intent Call	7,182	7,896	8,734	19%
False Call	3,515	3,995	3,765	9%
Other Situation Found	9	8	8	0%
Severe Weather & Natural Disaster	168	136	130	0%
Unclassified	5	18	95	0%
Total	**40,122**	**42,920**	**42,778**	**100%**

The table above shows that the largest portion of calls for service is comprised of emergency medical calls at approximately 62%, followed by good intent calls at 19%, and false calls at 9%. Fire calls represent approximately 2% of total calls for service, which averages out to approximately 2.5 calls each day.

The table, below, shows apparatus runs for the three-year period:

Fort Lauderdale Fire-Rescue
Apparatus Runs, 9/03 to 9/06

Unit	05-06 Runs	04-05 Runs	03-04 Runs	Avg./Day
EN46	4,741	4,876	4,683	13.06
EN2	4,577	4,499	4,328	12.24
EN8	4,253	4,355	4,073	11.58
RE46	4,070	5,024	4,765	12.66
RE2	4,056	4,300	4,188	11.46
RE8	3,951	4,322	4,028	11.23
EN47	3,194	3,370	3,032	8.76
RE246	3,066	2	4,188	6.63
RE16	2,850	3,107	3,255	8.41
EN16	2,770	2,768	2,708	7.53
EN3	2,749	3,040	2,901	7.94
EN29	2,637	2,829	2,695	7.45
RE3	2,586	2,866	2,759	7.50
EN35	2,556	2,633	2,459	6.98
RE35	2,486	2,615	2,369	6.82
QT2	2,357	2,358	2,310	6.42
RE47	2,300	2,486	2,253	6.43
RE247	2,289	2,421	2,238	6.35
RE54	2,192	2,378	2,306	6.28
EN54	2,073	2,396	2,236	6.12

Unit	05-06 Runs	04-05 Runs	03-04 Runs	Avg./Day
RE13	2,012	2,218	2,071	5.75
EN88	1,940	1,886	1,646	5.00
EN49	1,750	1,942	1,996	5.19
BC2	1,586	1,655	1,672	4.49
RE53	1,548	1,525	1,324	4.02
RE49	1,523	1,688	1,705	4.49
QT35	1,499	1,530	1,432	4.07
QT13	1,333	1,918	1,734	4.55
BC13	1,257	1,312	1,349	3.58
EN13	1,188	362	804	2.15
EM29	1,130	1,201	1,327	3.34
BC35	1,010	1,024	1,050	2.82
SU88	221	185	186	0.54
HM88	114	121	124	0.33
DC2	88	109	149	0.32

As shown above, Engine 46 made the most runs during 2005-06 at 4,741 or approximately 13 runs per day, followed by Engine 2, Engine 8, and Rescue 46, which each average approximately 12 runs each day over the period. It is also interesting to note that the 12 front line engines averaged approximately 2,860 runs over the three year period or approximately 8 runs each day, while front line rescue averaged 2,752 runs or approximately 7.5 each day.

The final table, below, shows average response times achieved by the first arriving unit to the scene of an emergency or "priority" incident over this time period. The project team also utilized NFPA and the Department's established response time objectives as a guide for evaluating response time intervals. One minute was used for dispatch processing time, one minute was used for "reflex" or turnout time, five minutes was used for drive time, and six minutes was used for total Fire Department response (based on the City's own stated objective of 6-minutes of FD response time).

Average Response Times and Fractile Performance and Response Time Objectives

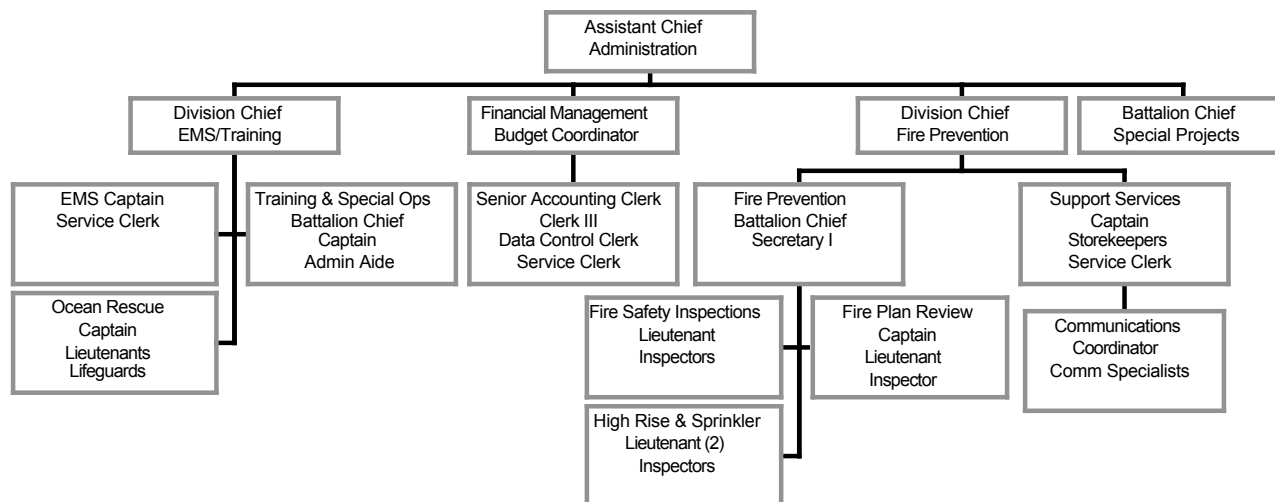| Response Time Element	2003-04	2004-05	2005-06
Avg. Dispatch	1.61	1.81	1.86
Avg. Reflex	1.62	1.76	1.87
Avg. Drive	2.87	3.10	3.40
Avg. Total FD Response	4.49	4.86	5.27
% Dispatch < 1 Min	38%	31%	28%
% Reflex < 1 Min	24%	22%	21%
% Drive < 5 Min	91%	89%	84%
% FD Total < 6 Min	84%	78%	70%

The following points highlight the information above:

• The Department averaged between 1.6 and 1.9 minutes for dispatch processing from September 2003 to September 2006. This time interval is defined by the time a 911 call was received to the time a unit was dispatched. Approximately 28% to 38% of calls were dispatched within 1 minute during this period.

• The Department averaged between 1.6 and 1.9 minutes for reflex or turnout time from September 2003 to September 2006. This time interval is defined by the time a unit was dispatched to the time a unit stated it was going "en-route". Approximately 21% to 24% of calls had a reflex time of less than one minute.

• FLFRD averaged 2.9 to 3.4 minutes of drive time to emergency incidents during the three-year period. Approximately 91% of calls were reached within 5 minutes of drive time during 2003-04. Performance has declined to 84% in 2005-06. Drive time is defined as the time between a unit going en-route to arrival on scene.

• FLFRD averaged 4.5 to 5.3 minutes in total Department response time over the period. Approximately 84% of calls were responded to within 6 minutes of fire department total response time during 2003-04. Performance against this measure has also declined as of 2005-06 to 70% of calls for service. Total fire department response time is defined as the time between dispatch to arrival on scene.

The next section provides information on administrative services.

4. ADMINISTRATION DIVISION

The Administration Division is responsible for a number of functions including:

fire prevention and education, emergency medical services, training, ocean rescue, and

financial management. The overall organization of the Division is shown below:

Current Organization of the Administration Division
Fort Lauderdale Fire Rescue

```
                        ┌──────────────────────┐
                        │   Assistant Chief    │
                        │    Administration    │
                        └──────────────────────┘
     ┌──────────────────┬───────────────┴───────────────┬──────────────────┐
┌─────────────┐  ┌──────────────────┐         ┌─────────────────┐  ┌──────────────┐
│Division Chief│  │Financial Management│        │ Division Chief  │  │Battalion Chief│
│ EMS/Training│  │ Budget Coordinator │        │ Fire Prevention │  │Special Projects│
└─────────────┘  └──────────────────┘         └─────────────────┘  └──────────────┘
```

| EMS Captain
Service Clerk | Training & Special Ops
Battalion Chief
Captain
Admin Aide | Senior Accounting Clerk
Clerk III
Data Control Clerk
Service Clerk | Fire Prevention
Battalion Chief
Secretary I | Support Services
Captain
Storekeepers
Service Clerk |

| Ocean Rescue
Captain
Lieutenants
Lifeguards | | | Fire Safety Inspections
Lieutenant
Inspectors | Fire Plan Review
Captain
Lieutenant
Inspector | Communications
Coordinator
Comm Specialists |

| | | | High Rise & Sprinkler
Lieutenant (2)
Inspectors | | |

The sections, that follow, describe the organization, function, and key roles and responsibilities of personnel assigned to the Administration Division.

(1)   Special Projects Battalion Chief

The Administration Division has one Battalion Chief assigned to handle special projects for the Department. The table, below, describes the key roles and responsibilities of this position.

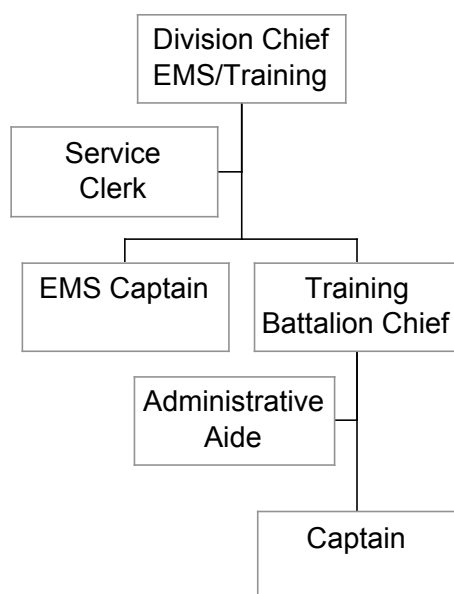| Position	Authorized	Roles and Responsibilities
Special Projects Battalion Chief	1	• The Special Projects Battalion Chief is responsible for a number of ongoing projects including: management and oversight of the station renovation and construction bond program, capital improvement projects committee, and CERT (Community Emergency Response) program. • This position is also charged with handling special projects as determined by the Fire Chief. • This position was originally a Deputy Chief position, but is now filled by a Battalion Chief. • Reports directly to the Fire Chief.

(2)   Emergency Medical Services and Training

The Emergency Medical Services unit is responsible for oversight and management of the EMS program. Functions include quality assurance and quality

control, research and development, ensuring that on-going training and mandatory re-certification is achieved, as well as provided logistical support to operations.

The training unit works closely with the EMS unit. Its primary responsibility is to provide on-going fire, rescue, and specialized operations training to shift personnel. The training unit and EMS unit also coordinate the field-training program for new recruits. The organization of these units is shown below:

```
          Division Chief
          EMS/Training
   Service
   Clerk
      EMS Captain      Training
                      Battalion Chief
              Administrative
              Aide
                          Captain
```

As shown above, the EMS and training units are comprised of 6 personnel, 4 sworn and 2 civilians.

(2.1)   Key Roles and Responsibilities

The table, below, describes the key roles and responsibilities of personnel assigned to these units:

Position / Classification	Positions	Key Roles and Responsibilities
Assistant Chief	1	• Relieves the Fire Chief/Director of Fire-Rescue of much of the day-to-day administrative, technical and supervisory detail work of the department by assisting with the management of Emergency Medical Services (EMS), Special projects, Budget, Training, Communications, Support Services, Fleet, Fire Prevention (inspection services/activities) and applicable support staff. • Responsible for the development and effective execution of administrative policies and procedures for all assigned functions of the department, and assists in such areas as personnel, employee relations, staffing record keeping, fiscal control, research and development, and training. • Assist the Fire Chief/Director with EMS forces in conjunction the Operations Division; ensures that personnel and equipment are properly allocated and effectively utilized, that all stations are properly maintained. • Conducts research, evaluates the need of personnel, facilities and equipment, and recommends changes in policies, practices, procedures, and equipment. • Assists in the development and implementation of the departmental budget; reviews purchases and purchasing procedures; and assists in control of expenditures.
Division Chief	1	• Provides overall management and oversight of the EMS Unit and EMS service delivery within FLFRD. Directly supervises the EMS Captains and service clerk. • Ensures that EMTs and Paramedic receive their re-certification through the State. • Provides QA/QC for "sentinel" EMS incidents including: multiple intubation incidents, field saves, deaths, pediatric cardiac arrests, chest decompressions, etc. • Manages the new recruit training program. • Performs research and development on new medical devices, EMS delivery, and other issues.

Position / Classification	Positions	Key Roles and Responsibilities
Battalion Chief – Training	1	• Responsible for management and delivery of recruit and in-service training. • Responsible for the Department's Hazardous Materials and Technical Rescue Teams. • Creates the Department's annual training plan in coordination with the Department's EMS and Operations Division Chiefs. • Coordinates and trains members of the Department Community Emergency Response unit. The unit is composed of citizens who attend an 8-week training program. The Department offered four classes in 2005 and trained approximately 120 volunteers. • Coordinated with EMS Captains to scheduled classes so that all paramedic personnel could complete their required 2-year recertification in 2006.
Captain - EMS	1	• This position is also responsible for provide QA/QC of "sentinel" EMS incidents. • Provides on-going EMS training required for re-certification. ACLS training is provided in February and August 6 times each month. Training is provided through 8-hour classes. • Performs research and development related to EMS issues, equipment, etc. • Coordinates special detail hiring for large events within Fort Lauderdale. • The person assigned to this position is currently on extended leave.

Captain - Training	2	• Responsible for providing recruit and in-service training. Focus is on fire rather than EMS training.
		• Provided training to three academy recruit classes in 2006 with a total of approximately 45 students.
		  – Recruit training take place over 9-week period and is spit between fire and EMS training.
		  – All recruits are state certified fire fighter paramedics. Hence the training focuses on Fort Lauderdale police and procedures and operating practices.
		• The Training Captains also develop monthly training objectives for Fire-Rescue training. Company officers are responsible for conducting monthly training objectives.
		• Developed and provided classes in hazardous materials and technical rescue to the respective teams as well as to all firefighter/paramedics in the Department. These drills were scheduled quarterly.
		• Because of the three academy classes the Division was unable to schedule monthly firefighter drills that have been part of the Department's training program.

Position / Classification	Positions	Key Roles and Responsibilities
Service Clerk	1	• Provides administrative support to the EMS Division Chief and Captain including: tracking EMS continuing education, scheduling, and general administrative support.
Administrative Aide	1	• Assists the Battalion Chief and the Captains in scheduling classes and providing support in the development of training materials.
Total	**7**	

The next subsection provides workload information:

(2.2) Workload Indicators

The project team collected training data, which describe the current level of fire, rescue, and EMS training activity taking place in the Department. The table, below, shows total training hours by type, number of attendees, and number of courses.

Fort Lauderdale Fire Rescue
Training Activities 9/1/05 to 9/30/06

Delivery Method	Total Hours	Attendees	Courses
Conference / Seminar	3.00	3.00	1.00
Fire Training / Classroom	290.00	355.00	90.00
Fire Training / Hands On	1,109.33	2,337.00	591.00
Interactive Video	28.25	100.00	16.00
Manipulative Drill	218.58	470.00	115.00
Medical Training / Classroom	995.25	1,119.00	307.00
Medical Training / Hands On	298.12	585.00	137.00
Mentoring Session / Program	185.37	25.00	13.00
Multi Company Drill	216.00	618.00	101.00
Other Training Method	182.92	215.00	63.00
Paramedic Preceptor Program	498.00	85.00	25.00
Self Directed / Interactive Training	733.68	2,318.00	596.00
Single Company Drill	65.10	259.00	68.00
Tutoring / Group Session	2.88	14.00	5.00
Tutoring / Individual Session	5.75	9.00	5.00
(blank)	93.25	280.00	62.00
Total	4,925.48	8,792.00	2,195.00

The following points highlight the information above:

- From September 1, 2005 to September 30, 2006, the Department Delivered 4,925 hours of training through a variety of methods including classroom instruction, hands on training, videos, multi-company drills and other methods.

- A total of 8,792 attendees participated in the training courses offered during this time period, for an average of 34 minutes per attendee.

- A total of 2,195 courses were offered during the period from September 1, 2005 to September 30, 2006. An average of 4 participants attended each training course.

The next section discusses the fire prevention unit.

(3)   Fire Prevention

The Fire Prevention Bureau is responsible for enforcing the Florida Fire Prevention Code, the Florida Building Code, applicable provisions of the National Fire Protection Association Life Safety Code, and City Code of Ordinances. The organization of the bureau is shown below:

Current Organization of the Fire Prevention Bureau
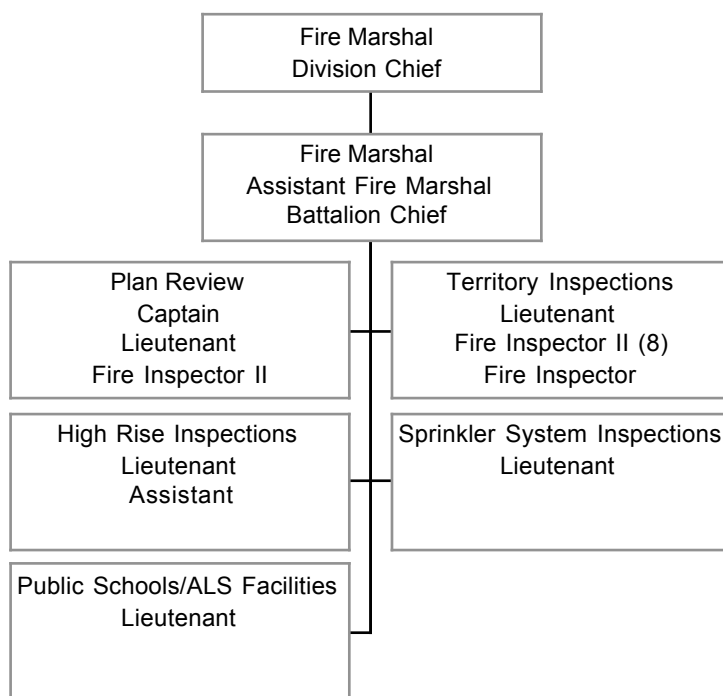
As shown above, the Prevention Bureau is organized into 5 units: Plans Review, Territory Inspections, High Rise Inspection, Sprinkler System Inspections, and Public Schools/ALF Facilities. The next section describes the key roles and responsibilities of personnel assigned to the Bureau.

(3.1) Key Roles and Responsibilities

Position / Classification	Positions	Key Roles and Responsibilities
Fire Marshal – Division Chief	1	• Provides management and oversight of the Fire Prevention Bureau including development of policies and procedures, ensuring that Division objectives are met, and providing overall leadership for the Bureau. • Directly supervises 5 Lieutenants, 1 Captain, and B.C. assigned to support services. • Reports directly to the Assistant Chief of Administration. • Works an 8-hour day shift.
Battalion Chief	1	• The Battalion Chief actually supervises support services and communications, although the position is under Fire Prevention. This position also acts as the manager of the Prevention Bureau when the Fire Marshal is out. • Supervises 1 Captain and 1 Communicators Coordinator assigned to Support Services and Communications. • Reports directly to the Division Chief over Fire Prevention. • work an 8-hour day shift.
Plans Review Captain Lieutenant Fire Inspector II	 1 1 1	• The Captain and Lieutenant assigned to Plans Review are responsible for site and building plans review for new construction within the City of Fort Lauderdale. They are physically located at the City's Building Services Department. • The Captain and Lieutenant are also responsible for attending development review meetings for large development projects within the City. • The Fire Inspector is responsible for conducting final certificate of occupancy inspections and fire suppression system inspections.

Position / Classification	Positions	Key Roles and Responsibilities
Territory Inspections Lieutenant Fire Inspector II Fire Inspector I	 1 8 1	• The Territory Inspections unit is responsible for the annual inspection of permitted occupancies within the City of Fort Lauderdale. These inspections typically include all business occupancies within the City, except those mandated by the state. • The City is divided into 9 zones and each inspector is responsible for inspection of those occupancies within their assigned zone. • The Lieutenant supervises the inspectors. • Inspectors work an 8 hour day, 5 days each week.
High Rise Inspections/Sprinkler System Inspections Lieutenant Assistant	 2 1	• This unit is responsible for the inspection of high-rise buildings and sprinkler systems in Fort Lauderdale. High-rise occupancies are inspected annually. • This unit works closely with the Lieutenant assigned to Sprinkler System Inspections. Standpipe and sprinkler system tests are performed annual with the assistance of shift personnel. • Work an 8-hour day, 5 days each week.
Fire Investigation Unit Lieutenant Investigator		• The Fire Investigation Unit is comprised of personnel who are assigned to the Fire Prevention Units described above. • The Lieutenant acts as Lead Investigator for the unit. • Investigators perform cause and origin investigations and arson investigations when requested by the incident commander. • Personnel who are assigned to the unit share call out duty on a rotating basis.

(3.1) Workload Indicators

The project team collected information on inspection and plan review workload within the Prevention Bureau. The table below shows the number of inspections completed up to August 2006 for the fiscal year.

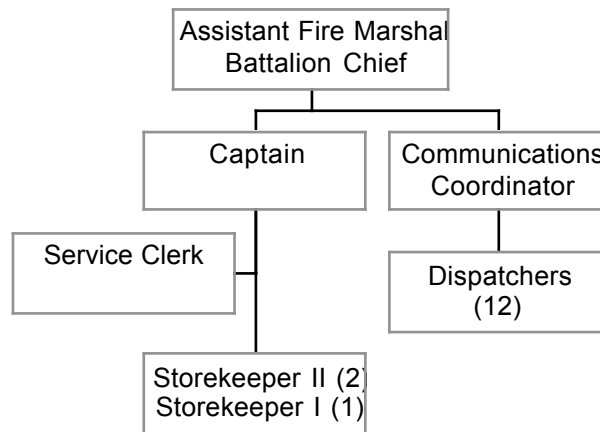| Annual Fire Inspections	FY 05-06 YTD Inspect.	YTD Re-Insp.	YTD Prior Year	YTD Rev.	YTD Prior Year	% Change Insp.	% Change Revenue
High Rise	275	316	361	$379,913	$288,736	-23.8%	32%
Sprinkler	763	472	1,100			-30.6%	
Fire Inspections	11,724	4,928	8,560	$359,668	$281,116	36.9%	28%
Special Testing				$54,892	$37,216		47%
Plan Review				$569,135	$231,710		146%
Total	12,762	5,716	10,021	1,363,608	838,778	27.3%	63%
Investigations	165		42				293%

The following points highlight the information above:

• The Prevention Bureau completed 275 high rise inspections and 316 re-inspections as of August 2006. This represents a decrease of 23.8% over the same period last fiscal year. However, revenue generated from these activities is up 32%.

• The Bureau completed 763 sprinkler inspections and 472 re-inspections as of August 2006. This represents an decrease of 31% over the same period last year.

• The Bureau completed 11,724 fire inspections over the same period and 4,928 re-inspections, representing an increase of approximately 37% since last year. In addition, revenue from these inspections increased by 28%.

• 165 fire investigations were performed as of August 2006, an increase of 293% over the same period last year.

The next section provides information on the Support Services unit.

(4)   Support Services / Communications

The Support Services unit is responsible for managing all equipment maintenance and supply, coordinating vehicle maintenance, and coordinating facilities maintenance for the FLFRD. In addition, the Communications unit provides dispatch services for the Fort Lauderdale Fire-Rescue Department. The Broward County Sheriffs Office is the Public Safety Answering Point (PSAP) for all 911 and landline calls for service that originates in Fort Lauderdale. If the BCSO dispatch center receives a fire or EMS call it is transferred to the Fort Lauderdale Fire Department for dispatch. The chart, below, shows the organization of these units:

Current Organization of the Support Services Bureau

```
        ┌────────────────────────┐
        │  Assistant Fire Marshal │
        │     Battalion Chief     │
        └────────────┬───────────┘
           ┌──────────┴──────────┐
  ┌────────────────┐    ┌──────────────────┐
  │    Captain     │    │  Communications   │
  │                │    │   Coordinator     │
  └───────┬────────┘    └─────────┬─────────┘
┌──────────────┐          ┌──────────────┐
│ Service Clerk│          │  Dispatchers │
└──────────────┘          │     (12)     │
                          └──────────────┘
     ┌──────────────────┐
     │ Storekeeper II (2)│
     │ Storekeeper I (1) │
     └──────────────────┘
```

(4.1)   Key Roles and Responsibilities

The table below describes the key roles and responsibilities of personnel assigned to the Support Services Bureau:

Position / Classification	Positions	Key Roles and Responsibilities
Support Services Lt.	1	• Responsible for supervision of the storekeepers assigned to Support Services. • Coordinates bid process for large purchase orders. • Responsible for managing inventory of narcotics. • Coordinate fleet maintenance requests. • Reports directly to the Battalion Chief in Prevention.

Communication Coordinator	.7	• The Communications Coordinator spends 30% of her time managing the Department's 12 Dispatchers in addition to managing communications equipment in the warehouse.
		• Inventory records are manual. The City's IT Department is working to install an automated inventory system that is currently being beta tested.
		• Sits on several committees including:
		  – Mutual aid committee.
		  – Regional Communication Task Force.
		  – Radio re-banding committee and radio upgrade.
		  – Smart Zoning project for City and County. Radio consoles in dispatch have been upgraded
		• Responsible for processing the ordering and work order repairs of all radios (fixed and portable), alert system components, batteries and telephones for the Department.
		• Works a flexible 8-hour day Monday through Friday in order to visit with dispatchers on each shift.

Storekeeper II Storekeeper I Service Clerk	2 1 1	• These positions perform inventory and fill equipment and supply requests. One Storekeeper II handles restocking of kitchen and station supplies, uniforms and work authorizations. The other Storekeeper II handles medical supplies, orders, tracks missing/broken equipment, and sorts supplies. • The Storekeeper 1 is a "runner" who makes equipment and supply deliveries each week to the stations. • The Service Clerk assists with inventory and supply tracking.

Position / Classification	Positions	Key Roles and Responsibilities

Coordinator	.3	• The Fire-Rescue Department receives Fire-Rescue calls from Broward County employed call takers who are resident in the City's 911 Center.
		 • Broward County Fire Dispatch provides Emergency Medical Dispatching (EMD) to Fort Lauderdale when requested. The Broward County Sheriff is the EMD provide for all county agencies.
		 • Technology
		   – Computer Aided Dispatch (CAD) – Intergraph was implemented in 1999.
		   – CAD data is transferred automatically to the Sun Pro records management system (RMS).
		   – A new EMS RMS system, Medusa, was implemented in August of 2006.
		   – Automatic Vehicle Locators (AVLs) have been installed in all apparatus.
		   – Computers have been installed in most apparatus will be radio linked with dispatch during FY06-07.
		 • The Communications Coordinator spends 70% of her time working in the Support Services warehouse managing the acquisition, repair, distribution and inventorying of communication equipment.
		 • The Coordinator supervises the Fire Dispatchers.
		 • Works with the City's Department of Human Resources to hire Communication Specialists. This task involves reviewing candidate skill tests, conducing candidate interview and recommending the hiring of personnel.
		 • Develop and revises dispatch policies and procedures.
		 • Develops a work schedule and ensures that minimum staff needs are fulfilled via the use of overtime assignments.
		 • Periodically visits with each shift of Dispatchers to discuss issues and oversee operations.
		 • Oversees the training of new personnel.
		 • Conducts annual evaluation of Dispatchers.
		 • Works a flexible 8-hour day Monday through Friday in order to visit with dispatchers on each shift.

Position / Classification	Positions	Key Roles and Responsibilities

Dispatchers	12	• At the time of the site visit four of the 12 Fire Dispatch positions were vacant.
		• The Department is in the process of hiring four dispatchers. Initial testing of candidates has been completed. Interviews are being scheduled with 28 potential candidates.
		• Recruit dispatches receive 8 to 12 weeks of on-the-job training.
		• A Communications Training Officer (CTO) assists the Communications Coordinator.
		• Dispatchers receive calls from Broward County call takers.
		• Dispatchers:
		  – Initiated call in CAD.
		  – Send and receive messages to emergency units.
		  – Track units and their activities.
		  – Close calls when complete.
		• Dispatchers work fixed 8-hour shift, five days per week. The shifts are:
		  – 6:30 AM to 2:30 PM.
		  – 2:30 PM to 10:30 PM.
		  – 10:30 PM to 6:30 PM.

Total	**18**	

(4.2) Workload Indicators

The project team collected information on workloads within Support Services and Communications. The first table, below, shows the number of service requests handled by Support Services during 2005 and year to date 2006:

Support Services Activities	Number	Avg./Day
Apparatus Maintenance Requests - 3/8/05 to 9/14/06	263	1.95
Customer Service Log Requests - 10/11/05 to 9/13/06	1,680	7.00
Work Authorizations - 1/1/06 to 9/11/06	338	1.88

As shown above, the Support Services unit handles an average of 2 apparatus maintenance requests each day, 7 customer service requests, which generally include station maintenance repairs and equipment repairs, and coordinate an average of 2 work authorizations each day. This workload is in addition to maintaining and ordering supplies and equipment.

The graph below presents the hourly distribution of service calls dispatched by the Fire Department. The first graph depicts the total number of calls and the second depicts the percent of calls by time of day. The trends displayed in the graphs are fairly typical of response demands patterns we have observed in other fire/EMS departments.

Calls for Service by time of Day
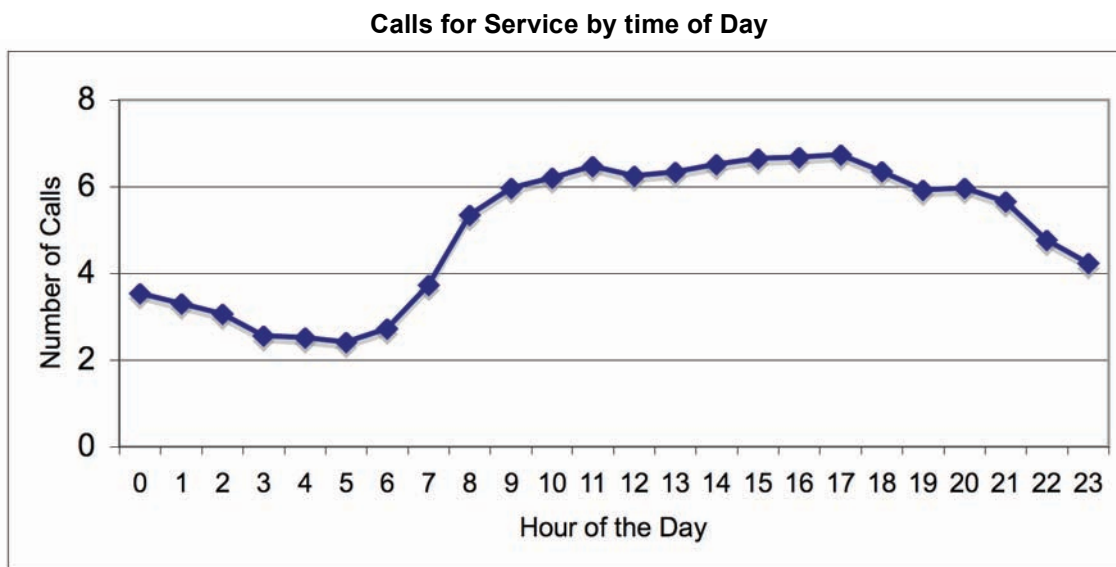
The graph below summarizes variations in the daily dispatch workload by the daily duty shifts worked by the dispatchers. Dispatchers work the following 8- hour shifts.

* Days – 6:30 AM to 2:30 PM
* Evenings – 2:30 PM to 10:30 PM
* Midnights – 10:30 PM to 6:30 AM

The graph below indicates that the day and evening shifts account for about 40% of the workload while the midnight shift accounts for 20% of the workload.

Dispatch workload by Duty Shift
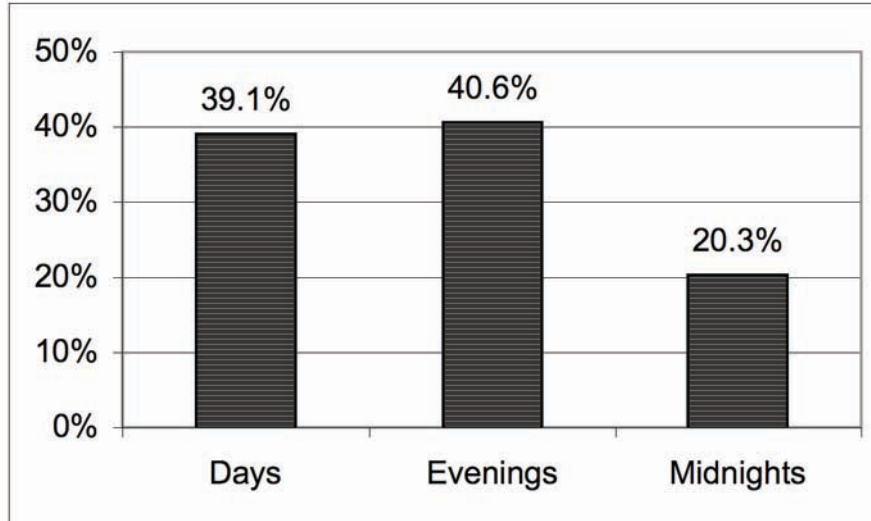
As shown above, the largest share of workload occurs during the evening shift, followed by the day shift, and then midnights.

(5)   Ocean Rescue

The Ocean Rescue division is responsible for providing lifeguard services to approximately 2.6 of the 7 miles of beach within Fort Lauderdale. The organization of the unit is shown below:

Current Organization of the Ocean Rescue Unit

The next section provides information on key roles and responsibilities.

(5.1) Key Roles and Responsibilities

The table below describes the key roles and responsibilities of personnel assigned to Ocean Rescue.

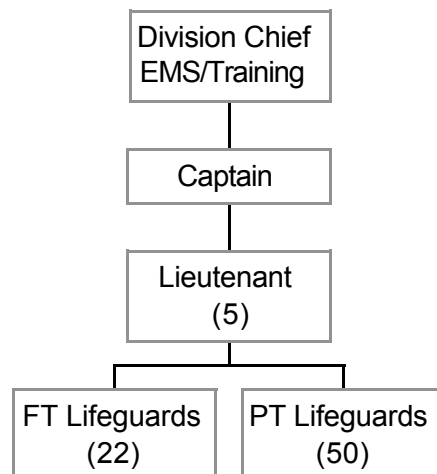| Position / Classification	Positions	Key Roles and Responsibilities
Captain	1	• Provides supervision and management of the Ocean Rescue Unit. • Ensures that unit goals and objectives are met and effective policies and procedures are in place. • Ensures that ongoing training is provided to new and existing employees. • Directly supervises the 5 Lieutenants assigned to Ocean Rescue.
Lieutenant	5	• Field supervisors for lifeguards. Ensure that policies and procedures are followed. • Ensure that ongoing training is provided to new and existing employees. • Respond to emergency incidents on the Beach • Schedule part-time lifeguard to ensure minimum staffing objectives are met. • Provide relief to lifeguards as needed. • Work from 8:00 a.m. to 5:15 p.m., five days per week Monday through Sunday.
Lifeguards	22 FT 50 PT	• Respond to emergency incidents on the Beach. • Staff 15 towers covering 2.6 miles of beach, at a distance of approximately 300 yards between towers. • 2 days each month lifeguards receive an organized medical training session. Lifeguards are trained at the first responder level. • Once each week lifeguards participate in a physical training exercise. • All training is held between 8:30 and 9:15 prior to shift start. • Semi-annual physical fitness tests are held.
Total	**28 FT** **50 PT**	

The next section provides information on workload and activities performed within Ocean Rescue.

(5.2) Workload Indicators

The table below provides information on activities and workload from October 1, 2005 through July 31, 2006:

Activity/Element	Apr. 06	May. 06	Jun. 06	July. 06	YTD
First Aids	180	258	108	121	1,871
Contacts	6,970	18,753	5,734	7,205	74,328
Patrons	486,725	2,314,627	285,560	413,595	5,436,143
Preventions	1,718	7,696	865	1,586	18,026
Rescues	5	40	4	11	77
Victim Lives Saved	6	43	7	21	110
Traumas & Medicals	3	6	5	6	28
Missing Persons	7	480	5	-	504
EMS Calls	3	5	5	6	28
Police Calls	1	1	2	2	15

As shown above, the Ocean Rescue Division administered 1,871 first aids to beach patrons over this time period. A total of 77 rescues were made, 110 victim lives saved, and 18,026 preventions occurred during the same period. From October 05 to August 2006, a total of 28 emergency medical calls and 15 police calls were also handled.

(7) Financial Management / Budget

The Financial Management unit is responsible for administering the Department's budget, managing payroll, purchasing, and grant administration. The organization of the unit is shown below:

Current Organization of the Finance/Budget Unit

```
          ┌──────────────────────┐
          │   Assistant Chief     │
          │   Administration      │
          └──────────┬───────────┘
                     │
          ┌──────────┴───────────┐
          │  Budget Coordinator   │
          └──────────┬───────────┘
          ┌──────────┴───────────┐
  ┌───────────────┐    ┌───────────────┐
  │ Senior Account │    │    Service    │
  │     Clerk      │    │     Clerk     │
  └───────────────┘    └───────────────┘
  ┌───────────────┐    ┌───────────────┐
  │    Clerk III   │    │ Data Control  │
  │                │    │   Clerk (2)   │
  └───────────────┘    └───────────────┘
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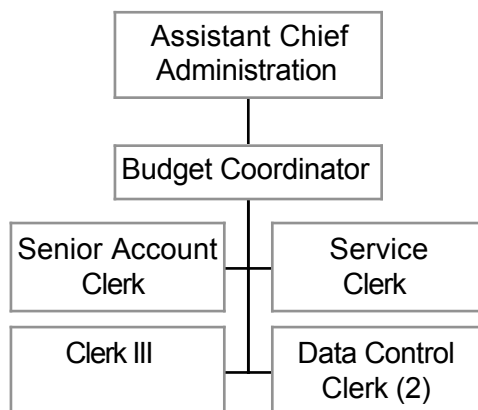
The table below discusses key roles and responsibilities of personnel assigned to

this unit:

Position / Classification	Positions	Key Roles and Responsibilities
Budget Coordinator	1	• Manages the finance and budgeting process of the department including the operating (and capital budgets. • Prepared the annual budget • Produces monthly report on budget conformance. • Tracks lost time and overtime. • Manages the accounting for grant funds. • Manages three account clerks. • Works a 5-day 40-hour weeks.
Senior Account Clerk	1	• Processes accounts payable. Creates purchase orders, verifies receipt of orders, creates payment orders for approval by the department and payment by the City's Finance Office.
Clerk III	1	• Responsible for time keeping activities. Gathers information form Telestaff system and enters it into the City Human Relations System, Cyborg, from which the payroll is created.
Service Clerk	1	• Responsible for processing rescue transportation bills. • Abstracts ambulance transportation information from Medusa EMS reports. Review the abstract for completeness and follow up with emergency units for missing information. • Forwards the information to ADP, the contractor responsible for patient billing and collections.

Position / Classification	Positions	Key Roles and Responsibilities
Data Control Clerk	2	• The positions have been reassigned to Fire Prevention and are responsible for inspection fee billing and collection. • The positions are staffed by two part-time personnel.
Total	**5**	

APPENDIX B
COMPARATIVE SURVEY

This document provides the results of the comparative survey that was conducted through telephone interviews from October 9 through October 23, 2006. Several criteria were used to select departments for participation in the survey. First, the departments had to provide fire suppression and advanced life support (ALS) emergency medical care as well as ambulance transportation services. Second, the fire and EMS agencies in Broward and Dade County were included. Third, several cities in Forth Lauderdale's population range were also surveyed to gain a national perspective. The table below lists the 23 jurisdictions that participated in the survey.

Survey Participants

Broward County	Dade County	National
Broward County Fire-Rescue	Hialeah	Columbus, Georgia
Coral Springs/Parkland	Miami	Des Moines, Iowa
Davie	Miami Beach	Mobile, Alabama
Hallandale	Miami-Dade	Montgomery, Alabama
Hollywood		Newport News, Virginia
Margate/Coconut Creek		Shreveport, Louisiana
Miramar		Tacoma, Washington
North Lauderdale		
Pembroke Pines		
Plantation		
Sunrise		
Tamarac		

The next section of the report provides demographic information about the surveyed departments.

1.   COMMUNITY DEMOGRAPHICS.

The exhibits on the following page provide information about the population and land area served by the departments.

Population and land Area of the Fire-Rescue Departments

Department	State	Population	Square Miles
Broward County	Florida	1,777,638	1,205
Columbus	Georgia	185,271	216
Coral Springs/Parkland	Florida	128,804	32
Davie	Florida	80,364	33
Des Moines	Iowa	194,163	76
Fort Lauderdale	**Florida**	**185,000**	**33**
Hallandale	Florida	35,369	4
Hialeah	Florida	246,000	19
Hollywood	Florida	145,629	27
Margate/Coconut creek	Florida	103,152	21
Miami	Florida	376,815	36
Miami Beach	Florida	89,313	7
Miami-Dade	Florida	2,000,000	1,946
Miramar	Florida	96,646	30
Mobile	Alabama	191,544	118
Montgomery	Alabama	200,127	155
Newport News	Virginia	179,899	68
North Lauderdale	Florida	33,534	4
Pembroke Pines	Florida	150,380	33
Plantation	Florida	84,929	22
Shreveport, LA	Louisiana	198,000	103
Sunrise	Florida	89,136	18
Tacoma	Washington	195,898	50
Tamarac	Florida	57,967	11

The following points summarize the information above:

•   The population of the responding agencies ranged from a low of 33,534 in North Lauderdale to a high of approximately 2 million in Miami-Dade County.

•   The geographic area covered by the responding agencies varied considerably, from a low of 4 square miles in Hallandale and North Lauderdale to a high of 1,946 square miles in Miami-Dade.

The next section of the report lists the staff levels in each department.

2.   AUTHORIZED STAFF LEVELS.

This section of the report lists the authorized staff levels for each department.

Authorized Sworn and Civilian Staff Levels

Department	Total Personnel	Sworn Personnel	Civilians
Columbus	378	368	10
Coral Springs/Parkland	172	159	13
Davie	175	165	10
Des Moines	280	270	10
Fort Lauderdale	**452**	**382**	**19 + 38 lifeguards**
Hallandale	85	82	3
Hialeah	334	286	48
Hollywood	273	223	8 + 40 lifeguards
Margate/Coconut creek	109	107	2
Miami	700	675	25
Miami Beach	225	205	20
Miami-Dade	2,200	1,953	247
Miramar	160	142	18
Mobile	460	420	40
Montgomery	459	452	7
Newport News	436	374	62
North Lauderdale	46	45	1
Pembroke Pines	266	235	31
Plantation	65	53*	12
Shreveport, LA	603	589	14
Sunrise	161	141	22
Tacoma	406	375	31
Tamarac	108	103	5

*Plantation is a combination department in which career personnel staff rescue
ambulances and volunteers staff fire apparatus

The following points summarize the information above:

• The number of sworn fire offices and firefighters ranged from a low of 45 in North Lauderdale to a high of in 1,953 Miami-Dade County.

• The number of civilian personnel in each department ranged from a low of 1 in North Lauderdale to a high of 247 in Miami-Dade County.

• The proportion of civilians varied among the departments and was related to the extent to which a department has responsibility for (1) communication dispatch services and or (2) beach rescue services.

The next section of the report discusses the deployment of Fire-Rescue

apparatus.

3.   STATIONS AND APPARATUS DEPLOYMENT.

Stations and Staffed Apparatus

Department	Stations	Engines	Aerials	Rescue Ambulances
Broward County	16	14	4	13
Columbus	14	14	4	8
Coral Springs/Parkland	7	7	1	6
Davie	4	5	0	6
Des Moines	10	10	7	7
Fort Lauderdale	**12**	**12**	**3**	**7**
Hallandale	3	2	1	3
Hialeah	7	5	2	7
Hollywood	6	6	3	7
Margate/Coconut creek	4	3	1	5
Miami	14	21	2	24
Miami Beach	4	4	2	6
Miami-Dade	NA	NA	NA	50
Miramar	4	3	1	4
Mobile	18	18	5	8
Montgomery	16	16	6	6
Newport News	10	10	7	11
North Lauderdale	2	1	1	2
Pembroke Pines	6	6	3	7
Plantation	6	6	1	4
Shreveport, LA	20	20	8	9
Sunrise	5	5	1	5
Tacoma	16	17	4	5
Tamarac	3	3	1	4

The following points summarize the information above:

- The number of stations in the departments ranged from a low of two in North Lauderdale to a high of in 20 in Shreveport, Louisiana.

- The number of engine companies in each department ranged from a low of one in North Lauderdale to a high of 21 in Miami.

- The number of ladder companies in each department ranged from none in Davie to a high of eight in Shreveport, Louisiana.

- The number of rescue ambulances in each department ranged from a low of two in North Lauderdale to a high of 50 in Miami-Dade County.

The next section of the report discusses chief officer assignments in operations.

4. CHIEF OFFICER ASSIGNMENTS IN OPERATIONS.

The table below lists the number of chief officers on-duty daily in operations.

Stations and Staffed Apparatus

Department	24-Hour Division Chiefs	24-Hour Battalion Chiefs	Total Chief Officers
Broward County	0	5	5
Columbus	0	3	3
Coral Springs/Parkland	1	1	2
Davie	0	2	2
Des Moines	0	2	2
Fort Lauderdale	**1**	**3**	**4**
Hallandale	0	1	1
Hialeah	1	2	3
Hollywood	0	1	1
Margate/Coconut creek	0	1	1
Miami	1	3	4
Miami Beach	0	1	1
Miramar	0	1	1
Mobile	0	3	3
Montgomery	0	4	4
Newport News	0	2	2
North Lauderdale	0	On-call	On-call
Pembroke Pines	0	2	2
Plantation	0	On-call	On-call
Shreveport, LA	1	5	6
Sunrise	0	1	1
Tacoma	0	2	2
Tamarac	0	1	1

The following points summarize the information in the table above:

- Number of chief officers on duty:
    - 6 chief officers – 1 department.
    - 5 chief officers – 1 department
    - 4 chief officers – 3 departments.
    - 3 chief officers – 3 departments.
    - 2 chief officers – 6 departments.
    - 1 chief officer – 7 departments.

The next section of the report discusses minimum apparatus staffing levels.

5.   MINIMUM APPARATUS STAFFING.

The table below lists the minimum on-duty staff assigned to engines, aerials and

rescue ambulances in each of the survey departments.

Minimum Apparatus Staffing

Department	Engines	Aerials	Rescue Ambulances
Broward County	3	3	2*
Columbus	4	4	2 to 3
Coral Springs/Parkland	3	3	2
Davie	3	0	3
Des Moines	3	3	2
Fort Lauderdale	**3**	**3**	**2**
Hallandale	2	2	3
Hialeah	3	3	3
Hollywood	3	3	3
Margate/Coconut creek	3	2	3
Miami	4	4	3
Miami Beach	4	4	3
Miami-Dade	4	4	3
Miramar	3	3	3
Mobile	4	4	2
Montgomery	4	4	2
Newport News	3	3	2
North Lauderdale	3	3	2
Pembroke Pines	3	3	3
Plantation	Volunteers	Volunteers	3
Shreveport, LA	3	2	2
Sunrise	3	3	3
Tacoma	3	3	2
Tamarac	3	0 – 3	4

*Broward County staffs its rescues with 2-person crews, except for some contract cities that pay for a third crew member.

The following points summarize the information in the table above:

•   Sixteen departments staff their engines with a minimum of 3-person crews while six staff with a minimum of 4-person crews.

•   Five departments staff their aerials with a minimum of 4-person crews, 12 staff with 3-person crews, three staff with 2-person crews and two do not deploy aerials.

•   Ten departments staff their rescue ambulances with a minimum of 3-person crews while 14 staff with a minimum of 2-person crews.

The next section of the report discusses the EMS service levels.

6.   EMS SERVICE LEVELS.

This section of the report lists the EMS service levels for each of the surveyed

departments.   All of the departments provide ALS care from their rescue ambulances.

EMS Service Levels

Dispatch Provider	Engine/Ladders
BLS Engines/Ladders	Newport News, VA
Mix of BLS & ALS Engines/Ladders	Columbus, GA Des Moines, IA Hialeah, FL Miami-Dade, FL Mobile, AL Montgomery, AL Shreveport, LA Tacoma, WA
All ALS Engines/Ladders	Broward County Coral Springs, FL Davie, FL **Fort Lauderdale, FL** Hallandale, FL Hollywood, FL Margate/Coconut Creek, FL Miami, FL Miami Beach, FL Miramar, FL Plantation, FL North Lauderdale, FL Pembroke Pines, FL Sunrise, FL Tamarac, FL

The following points summarize the information in the table above:

•   Only one department provides BLS care from its engine and ladder companies.

•   Eight departments deploy a mix of BLS and ALS engine and ladder companies. The mix is dependent on the number of ALS personnel in the department. One ALS person must be available for an ALS equipped and certified piece of apparatus to provide ALS service.

•   Fifteen of the departments have sufficient ALS personnel on duty daily to provide ALS care from all of their apparatus.

The next section of the report discusses service call levels.

7. EMERGENCY SERVICE CALLS.

This section of the report lists the number of emergency calls and patients transported by the surveyed departments.

Emergency Calls and Patient Transports

Department	Total Calls	EMS	Non-EMS	Patient Transports
Broward County	NA	NA	NA	NA
Columbus	27,280	22,600	4,680	13,560
Coral Springs/Parkland	12,627	9,0023	3,625	NA
Davie	14,000	NA	NA	5,624
Des Moines	16,085	13,262	2,823	10,455
Fort Lauderdale	**43,832**	**35,162**	**8,670**	**20,971**
Hallandale	8,100	6,200	1,900	3,316
Hialeah	32,332	NA	NA	NA
Hollywood	25,000	NA	NA	11,500
Margate/Coconut creek	16,451	5,473	10,978	8,500
Miami	84,251	14,610	69,698	35,000
Miami Beach	19,000	14,700	4,300	7.218
Miami-Dade	206,413	154,325	52,085	49,768
Miramar	10,193	7,681	2,512	3,686
Mobile	28,543	17,809	11,734	6,925
Montgomery	25,500	22,000	5,500	Private transport
Newport News	34,916	23,214	11,702	6,990
North Lauderdale	4,570	2,993	1,655	2,022
Pembroke Pines	22,160	18,397	3,763	10,200
Plantation	11,000	8,500	2,500	NA
Shreveport, LA	35,166	24,676	10,490	14,798
Sunrise	12,000	7,680	4,320	6,200
Tacoma	37,850	28,700	9,150	5,940
Tamarac	12,000	10,200	1,800	8,500

The following points summarize the information in the table above:

• The number of emergency calls ranged from a low of 4,570 in North Lauderdale to a high of 206,413 in Miami Dade.

• The number of patients transports ranged from a low of 2,022 in North Lauderdale to a high of 49,768 in Miami-Dade.

The next section of the report discusses communication dispatch services.

8.   COMMUNICATION DISPATCH SERVICES.

This section of the report describes the way in which communication services are

provided for each surveyed department.

Communications Dispatch Staffing

Dispatch Provider	Staffed by Firefighters	Staffed by Civilians
Fire Department	Tacoma, Washington	Coral Springs, FL **Fort Lauderdale, FL*** Hialeah, FL Miami, FL Miami-Dade, FL Miramar, FL Mobile, AL Pembroke Pines, FL Shreveport, LA Sunrise, FL**
Combined Fire and Police or Police Department		Columbus, GA Des Moines, IA Hollywood, FL Margate, FL Miami Beach, FL Montgomery, AL Newport News, VA Plantation, FL
Broward County Sheriff		Broward County, FL Davie, FL Hallandale, FL North Lauderdale, FL Tamarac, FL

*Fort Lauderdale, FL – Broward County sheriff call takers and fire department dispatchers.
**Sunrise, FL – Police department answers calls and the fire department dispatches the fire and EMS calls.

• Only one department, Tacoma, Washington, employs sworn firefighters as dispatchers.

• Ten fire departments, including Fort Lauderdale, have their own dispatch Operations.

• Eight departments receive dispatch services from a center that serves fire and police.

• The Broward County Sheriff Office provides dispatch services to five departments.

The next section of the report contains information about fire prevention staffing.

9. FIRE PREVENTION SERVICES.

This section of the report lists the number of fire prevention personnel in each of the surveyed departments. Fire inspectors in "Broward County must be sworn firefighters.

Fire Prevention Inspectors, Investigators and Plan Reviewers

Department	Sworn Personnel	Civilian Personnel
Broward County	20+	0
Columbus	10	0
Coral Springs/Parkland	10	0
Davie	4	0
Des Moines	9	0
Fort Lauderdale	**20**	**0**
Hallandale	2	0
Hialeah	8	0
Hollywood	6	0
Margate/Coconut creek	2	0
Miami	47	0
Miami Beach	NA	7
Miami-Dade	53	105
Miramar	6	0
Mobile	14	0
Montgomery	NA	NA
Newport News	6	3
North Lauderdale	6	0
Pembroke Pines	NA	NA
Plantation	3	0
Shreveport, LA	9	0
Sunrise	8	0
Tacoma	13	0
Tamarac	3	0

The following points summarize the information in the table above:

- With the exception of Miami-Dave all of the departments are using career personnel to staff their prevention functions.

- The number of inspectors and investigators ranges from a low of two in Hallandale and Margate to a high of in 158 Miami-Dade.

The next section of the report contains information about training staffing.

10. TRAINING.

This section of the report lists the number of personnel assigned to training in

each of the surveyed departments.

Training Personnel

Department	Sworn Personnel	Civilian Personnel
Broward County	9	0
Columbus	9	0
Coral Springs/Parkland	2	0
Davie	1	0
Des Moines	6	0
Fort Lauderdale	**3**	**0**
Hallandale	1	0
Hialeah	NA	0
Hollywood	3	0
Margate/Coconut creek	1	0
Miami	NA	NA
Miami Beach	3	0
Miami-Dade	NA	NA
Miramar	2	0
Mobile	7	0
Montgomery	NA	0
Newport News	7	0
North Lauderdale	1	0
Pembroke Pines	NA	NA
Plantation	2	0
Shreveport, LA	9	0
Sunrise	2	0
Tacoma	5	0
Tamarac	1	0

The following points summarize the information in the table above:

• All of the departments are using sworn fire officers and firefighters as trainers.

• The number of trainers ranges from a low of one in Davie, Margate, North Lauderdale and Tamarac to a high of nine in Columbus, Georgia and Shreveport, Louisiana.

The next section of the report contains a staffing matrix for engines and rescue

ambulances.

11. ENGINE AND RESCUE AMBULANCE STAFFING MATRIX.

Minimum Engine and Rescue Ambulance Staffing

Engines / Rescues	2-Person Rescue Ambulances	3-Person Rescue Ambulances
2-Person Engines		Margate/Coconut Creek, FL Hallandale, FL
3-person Engines	Broward County, FL Columbus, GA* Coral Springs, FL Des Moines, IA **Fort Lauderdale, FL** Newport News, VA North Lauderdale, FL Shreveport, LA*** Tacoma, WA	Columbus, GA* Davie, FL (No aerial) Hialeah, FL Hollywood, FL Miramar, FL Pembroke Pines, FL Sunrise, FL**** Tamarac, FL*****
4-person Engines	Mobile, AL Montgomery, AL**	Miami Beach, FL Miami, FL Miami-Dade, FL
Volunteers		Plantation, FL

*Columbus, GA - Rescue ambulances are staffed by a mix of 2- and 3-person crews.
**Montgomery, AL – Deploys rescue ambulances but transport is done by private companies.
***Shreveport, LA – Ladders are staffed with 2 person crews.
••••Sunrise FL – Current rescue ambulance staffing is 2 person crews but will increase to 3 in next budget. Deploy one 2-person ladder.
*****Tamarac, FL – Has a ladder but it is not always staffed.